

## EMGZ 600 Series Digital Tension Measuring Amplifiers

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**Digital Microprocessor controlled**  
**High performance & speed capability**

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**Up to 4 independent channels**  
**Saves machine space and money**

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**4 key programming**  
**Easy to set-up and operate**

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**BUS interfacing capability**  
**Remote connectability and integration simplicity**

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**Special features built-in**  
**Powerful and user-friendly in one package**

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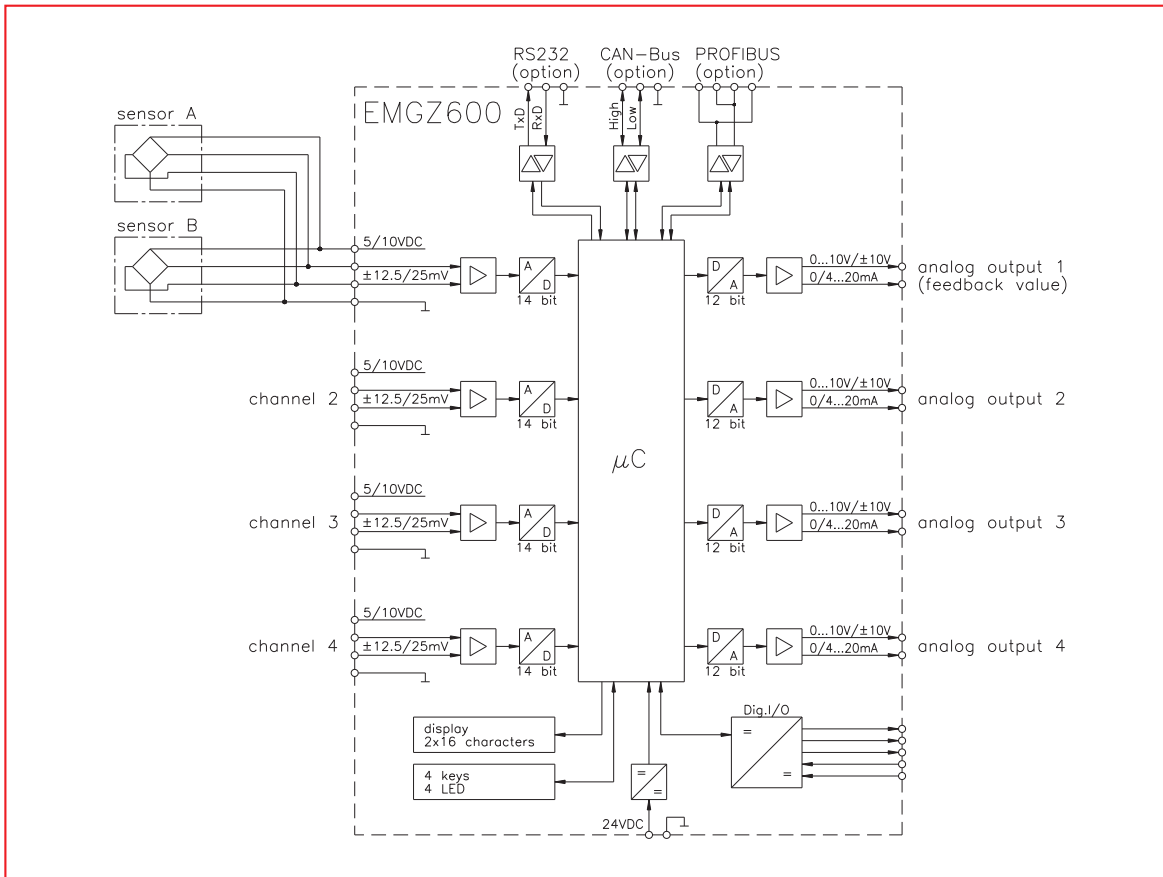
### ● EMGZ 600 Series

The EMGZ 600 Series digital tension measuring amplifier with large dual line LCD display, plain text in different languages, and only 4 programming keys makes this a very easy to set-up and operate measuring unit. All parameters and functions can be set with keys or remotely via PC or BUS interface. Digital signal filtering, automatic offset calculation, automatic short circuit or cable break detection, built in gain switching facility along with all the other features creates a very powerful and userfriendly tension measuring system.

### ● Functional description

The EMGZ 600 Series digital tension measuring amplifier is available in 1 to 4 channel versions. They are suitable for tension measurement with almost any kind of strain gauge based force sensors. The EMGZ 600 Series digital tension measuring amplifier is available in wall and panel mount housing. Design and function are optimised for tension measuring applications. The mV signal of the sensors is preamplified with a fixed gain and then fed directly to the A/D converter. Signal conditioning is done digitally. The 14 bit ( $\pm 8192$  digits) resolution results in high accuracy across a wide force range.

**EMGZ 600 Series • Block diagram**



**EMGZ 611...614**

**One to four channels.** One or two sensors per channel can be connected.

**EMGZ 621**

Two channels. **Separate** processing of left and right force sensor. Output signals are A, B, A+B, A-B.

**EMGZ 622/642**

Two or four channels. **Double Range Force Sensors** can be connected.

**EMGZ 600 Series • General technical data**

	EMGZ611	EMGZ612	EMGZ613	EMGZ614	EMGZ621	EMGZ622	EMGZ642
<b>Channels</b>	1	2	3	4	1	1	2
<b>Housing dimensions</b>	small	small	large	large	small	small	large
<b>Additional functions</b>	–				left/ right separately	Double range force sensors	
<b>Force sensors</b>	1...2 x 350 Ω per channel				2 x 350 Ω	2 x 2 x 350 Ω per channel	
<b>Sensor supply</b>	5 VDC <sup>1)</sup> (default) or 10 VDC <sup>1)</sup>						
<b>Input signal range</b>	0...9 mV (max. 12.5 mV) or 0...18 mV (max. 25 mV) <sup>2)</sup>						
<b>Resolution A/D converter</b>	± 8192 Digit (14 Bit)						
<b>Measuring error</b>	< 0.05 %						
<b>Output signal range</b>	0...10 V / ± 10 V / 0...20 mA / 4...20 mA (12 Bit)						
<b>Cycle time</b>	2 ms						
<b>Operation</b>	4 keys, 4 LED's, LCD display 2 x 16 characters (8 mm height)						
<b>Interfaces</b>	RS 232, Profibus <sup>®</sup> DP (EN 50170) <sup>3)</sup> , CANopen <sup>3)</sup> , DeviceNet™ <sup>3)</sup>						
<b>Power supply</b>	24 VDC (18...36 VDC) / 10 W (max. 1 A), 110 VAC <sup>3)</sup> <sup>4)</sup> , 230 VAC <sup>3)</sup> <sup>4)</sup> , galvanically isolated						
<b>Temperature range</b>	– 10...50 °C						
<b>Protection class</b>	IP 54						
<b>Weight</b>	1.5 kg						

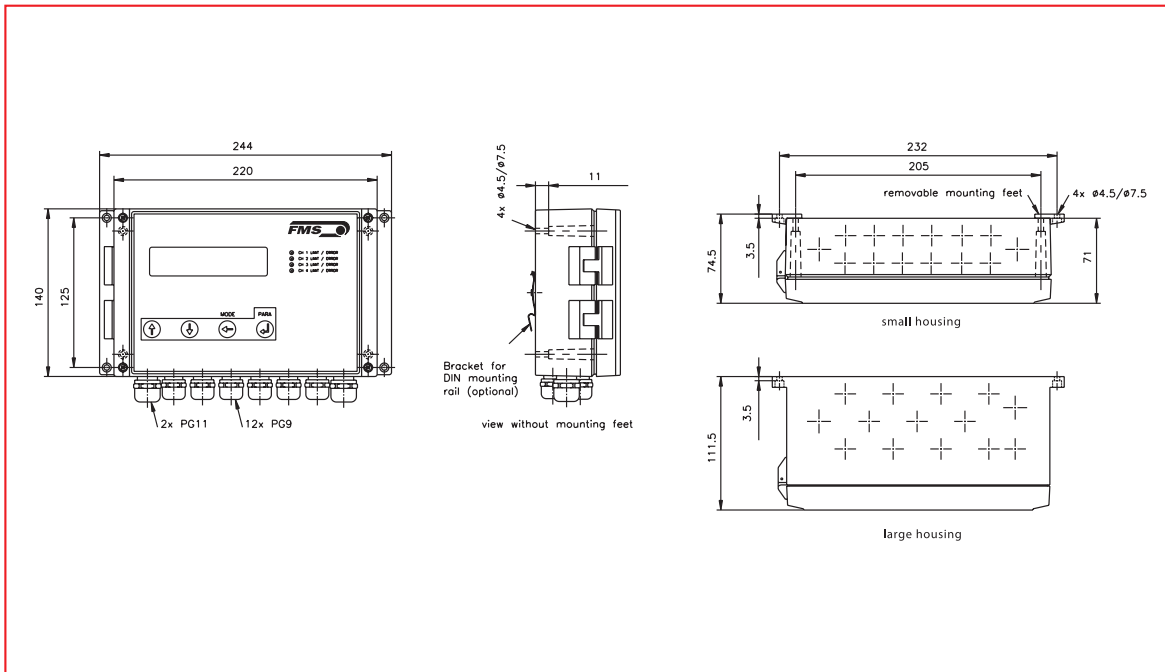
1) 6 wire circuit also possible 2) depending on force sensor excitation 3) optional 4) large housing required

**EMGZ 600 Series • Technical data analogue input / output**

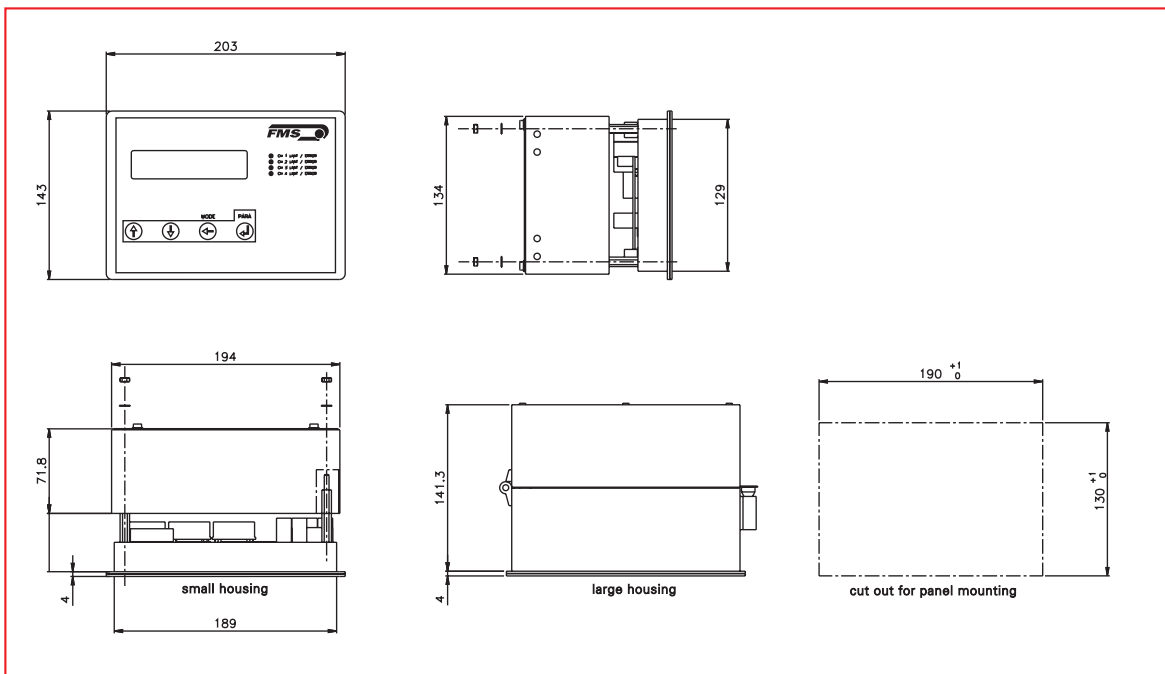
	EMGZ611	EMGZ612	EMGZ613	EMGZ614	EMGZ621	EMGZ622	EMGZ642
<b>Analogue input 1</b>	Roller 1	Roller 1	Roller 1	Roller 1	A (left)	Roller 1 / Range 1	Roller 1 / Range 1
<b>Analogue input 2</b>	–	Roller 2	Roller 2	Roller 2	B (right)	Roller 1 / Range 2	Roller 1 / Range 2
<b>Analogue input 3</b>	–	–	Roller 3	Roller 3	–	–	Roller 2 / Range 1
<b>Analogue input 4</b>	–	–	–	Roller 4	–	–	Roller 2 / Range 2
<b>Analogue output 1</b>	Feedback 1	Feedback 1	Feedback 1	Feedback 1	A + B	Roller 1 / Range 1	Roller 1 / Range 1
<b>Analogue output 2</b>	–	Feedback 2	Feedback 2	Feedback 2	A – B	Roller 1 / Range 2	Roller 1 / Range 2
<b>Analogue output 3</b>	–	–	Feedback 3	Feedback 3	A (left)	–	Roller 2 / Range 1
<b>Analogue output 4</b>	–	–	–	Feedback 4	B (right)	–	Roller 2 / Range 2
<b>Digital inputs <sup>1)</sup> <sup>3)</sup></b>	2 per channel: Find offset Switch gain				4 in total: Find offset L Find offset R Switch gain L Switch gain R	4 per channel: Find offset range 1 Find offset range 2 Switch gain range 1 Switch gain range 2	
<b>Digital outputs <sup>2)</sup> <sup>3)</sup></b>	2 per channel: Min. limit <sup>4)</sup> , Max. limit <sup>4)</sup> , Error <sup>4)</sup> , OK <sup>4)</sup>				4 in total: Limit 1 Limit 2 Limit 3 Error <sup>4)</sup> , OK <sup>4)</sup>	4 per channel: Limit 1 range 1 Limit 2 range 1 Limit 1 range 2 Limit 2 range 2 Error <sup>4)</sup> , OK <sup>4)</sup>	

1) 24VDC via opto coupler 2) Open collector 3) galvanically isolated 4) alternatively

**EMGZ 600 Series • Dimensions in mm wall mounting version**



**EMGZ 600 Series • Dimensions in mm panel mounting version**



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