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# LMU 110

## Load Monitoring Unit

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### FEATURES

- For use with full-bridge strain gauge transducers (Sensitivity 0.5 to 2 mV/V, set at factory)
- Input for 4 transducers; impedance: 350  $\Omega$
- Voltage input: 18–32 VDC
- Current output: 4–20 mA DC
- Provides continuous detection of signal line failure and short circuits
- Euro-type connector DIN 41612
- Compatible to CE standards

#### Features of LMU 110 with housing:

- Aluminum housing with IP 65 protection class
- Screw terminal connection



### DESCRIPTION

Magtrol's LMU 110 Load Monitoring Unit is a 4-channel bridge amplifier with current output used for measuring load, force and weight from signals generated by strain gauge transducers. Specifically designed for use with Magtrol's Load Measuring Pins and Load-Force-Weight Sensors, the LMU 110 provides excitation voltage while conditioning the bridge output signal.

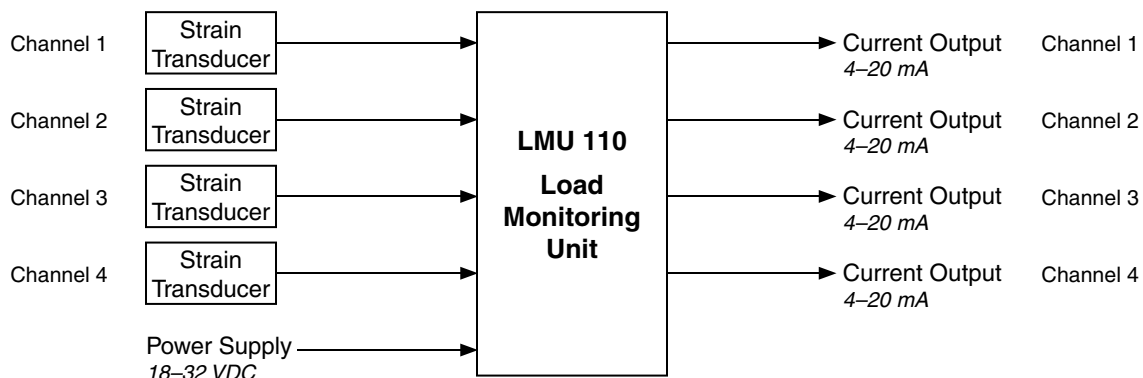
The LMU 110 is set for a specific transducer. The sensitivity and the offset are adjusted at the factory according to the

transducer type and its application. Installation is easy because no solder connections are required.

Magtrol Load Monitoring Units are fully compatible with European Community (CE) standards. The LMU 110 with the housing is specially designed for use in harsh environments. Using SMD (surface mounted device) technology, the LMU allows the maximum performance/price ratio for strain gauge transducer monitoring.

### SYSTEM CONFIGURATION

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**TECHNICAL CHARACTERISTICS**

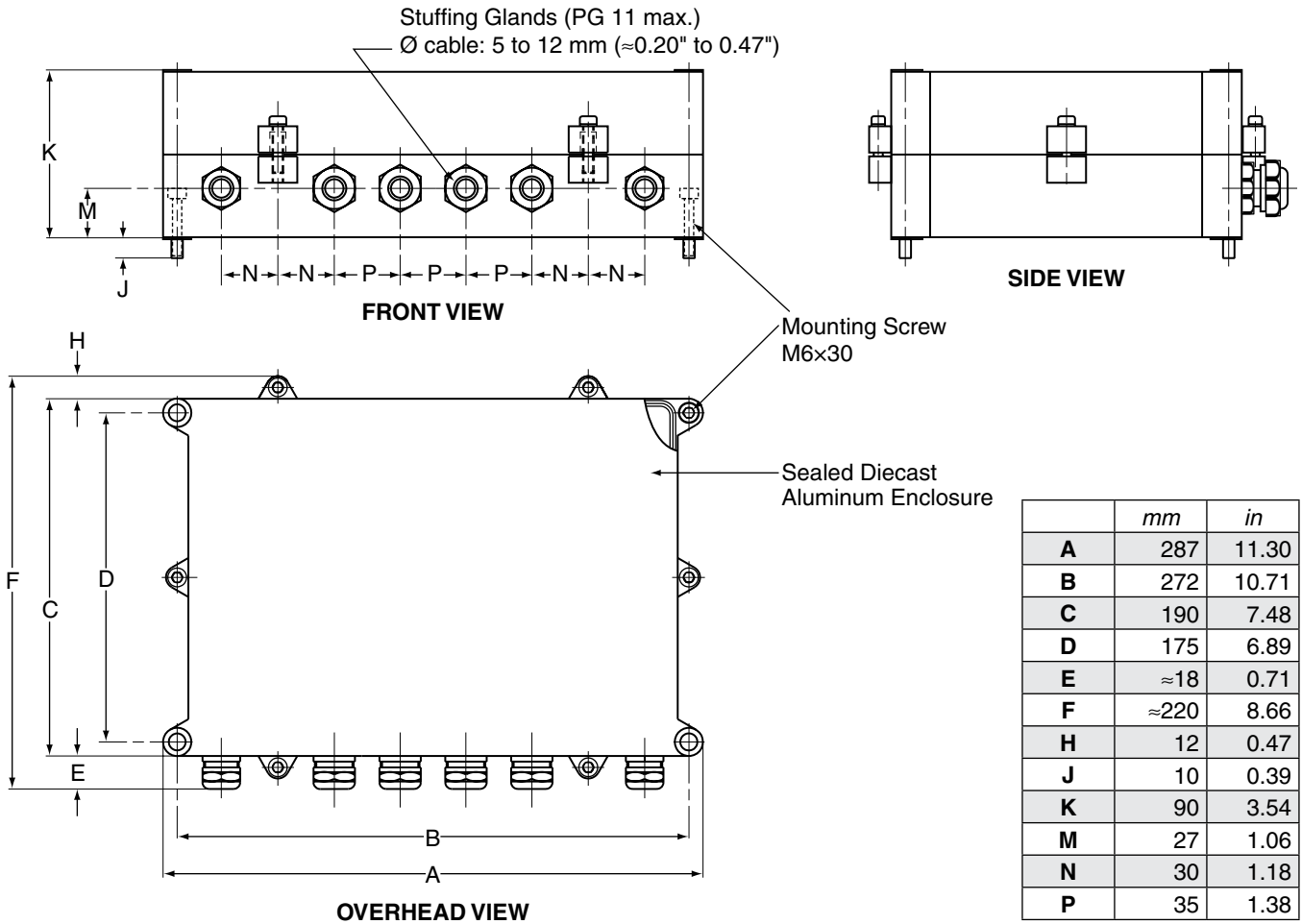
<b>INPUT CHARACTERISTICS</b>	
<b>Power Supply</b>	
Voltage (DC only)	18 to 32 VDC
Maximum Current	< 300 mA for 24 VDC
<b>Bridge Signal (4 independent inputs)</b>	
Supply Voltage	10 VDC
Sensitivity	0.5 to 2 mV/V (set at factory)
<b>OUTPUT CHARACTERISTICS</b>	
<b>Current Output (4 independent outputs)</b>	
Output Type	Current generator
Nominal Current Range	4 to 20 mA DC
Max. Current Range	2 to 22 mA DC
Max. Load	< 500 $\Omega$ for $I_{max} = 20$ mA
Output Impedance	> 500 k $\Omega$
<b>MECHANICAL CHARACTERISTICS</b>	
<b>Housing (option)</b>	
Material	Aluminum
<b>Stuffing Glands</b>	
Number and Type	6 $\times$ PG 11
Material	Nickel-plated brass
<b>Terminal Strip</b>	
Type	MK8 (screw at 45° and connection at 45°)
Max. Area of Connecting Wire	AWG 20 to 16 Cross-section: 0.5 to 1.5 mm <sup>2</sup> ( $\approx$ 0.00077 to 0.0023 in <sup>2</sup> )

<b>TRANSFER CHARACTERISTICS</b>	
Adjustment Range	Factory set
Zero Adjust Accuracy (0 mV/V at the input)	$\leq \pm 50 \mu\text{A}$
Zero Drift vs. Temperature	< 50 ppm/°C
Gain Adjust Accuracy	$\leq 0.5\%$
Gain Drift vs. Temperature	< 50 ppm/°C
BSL* Linearity Error	< 0.02%
• 4–20 mA range	< 0.05%
• 2–22 mA range	
Frequency Response	0 to 8 Hz (-3 dB)
<b>ENVIRONMENTAL CHARACTERISTICS</b>	
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +125°C
Protection Class	IP 65 (only for LMU 110 with housing)
Vibration and Shock	According to IEC 68.2
EMC	According to EN-58081-2 (Generic Emission Standard) and EN-58082-2 (Generic Immunity Standard)

\* BSL = Best straight-line computation method

The LMU 110 is used with Magtrol Load Measuring Pins which measure load and force and provide overload protection. Magtrol also offers a wide range of Load-Force-Weight Transducers in various executions and accuracy classes and our Digital Process Monitors/Signal Conditioners measure and display load, force and weight from signals generated by strain gauge transducers.

**LMU 110 WITH HOUSING**



	mm	in
<b>A</b>	287	11.30
<b>B</b>	272	10.71
<b>C</b>	190	7.48
<b>D</b>	175	6.89
<b>E</b>	≈18	0.71
<b>F</b>	≈220	8.66
<b>H</b>	12	0.47
<b>J</b>	10	0.39
<b>K</b>	90	3.54
<b>M</b>	27	1.06
<b>N</b>	30	1.18
<b>P</b>	35	1.38

*Due to the continual development of our products, we reserve the right to modify specifications without forewarning.*



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