

FMS Tension Control / Measuring Amplifier

EMGZ492.PNET-Series Dual-Channel Measuring Amplifier for PROFINET IO

- **PROFINET IRT- or RT-Device**
Simple integration into PROFINET networks
- **Precise material tension over the entire measuring roller**
Independent data evaluation of two force sensors for left and right
- **Communication cycle time ≥ 0.5 ms (IRT)**
Fast and precise – well suited for time-critical applications
- **Various installation options**
Narrow DIN rail version for cabinet or sealed IP 65 wall mount for harsh environment.
RJ45/M12 plugs and detachable terminal blocks for easy installation

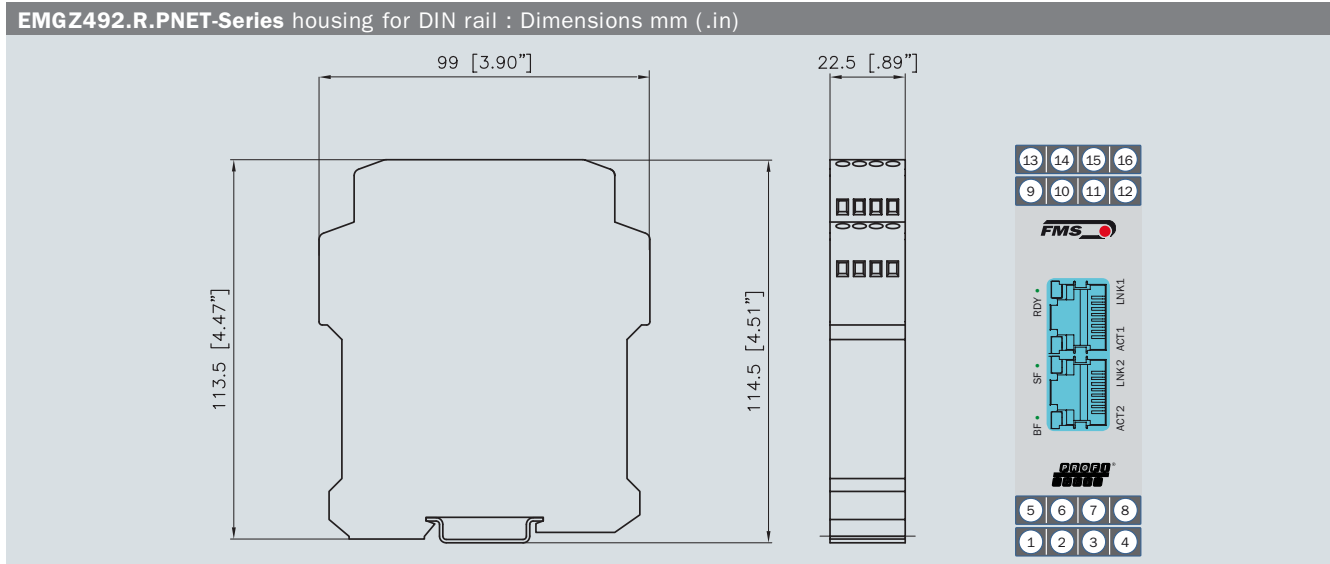
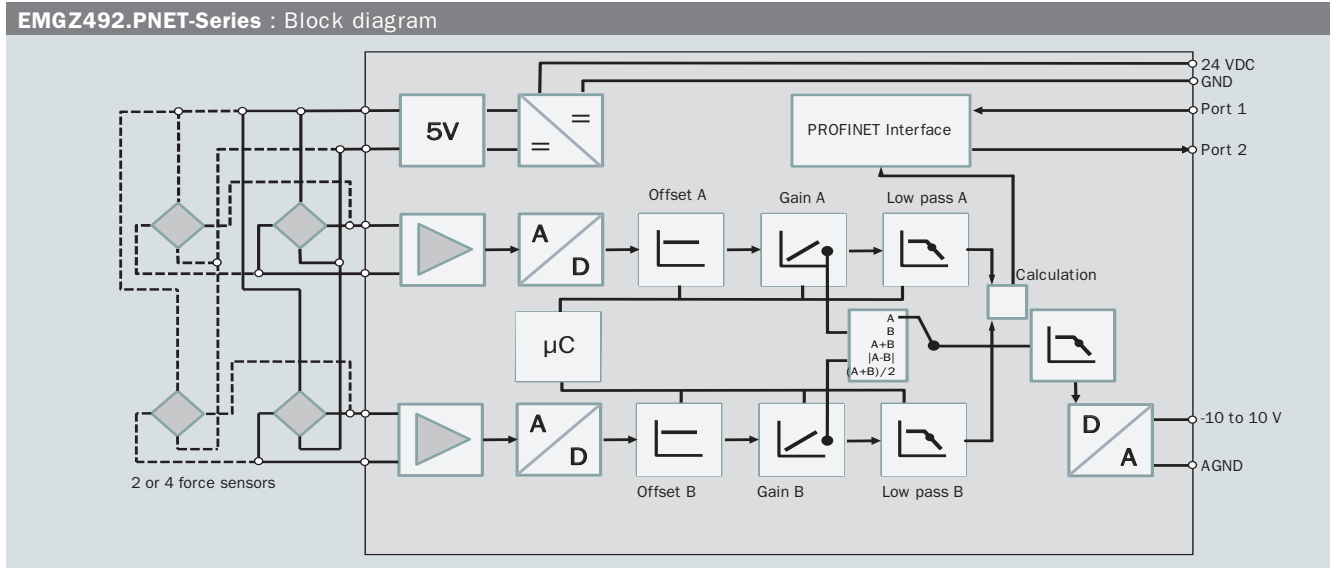


EMGZ492.PNET-Series

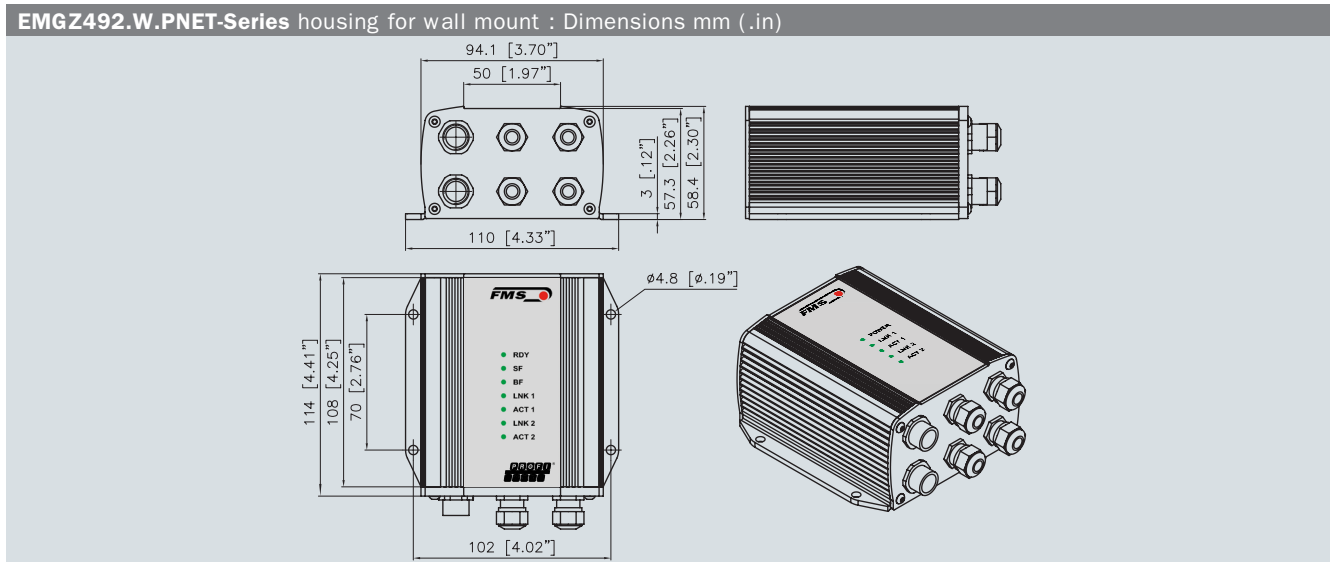
The EMGZ492.PNET amplifier has been designed for use in modern PROFINET IO networks where a typical application involves the measurement or control of web tension in coating, laminating, printing, extrusion, or other similar roll to roll processes. On a measuring roller with two force sensors the signals can be processed and evaluated individually for left and right sides. This dual channel amplifier can process the signals from one or two measuring rollers with two force sensors each. Making full use of the PROFINET IO capabilities allows this amplifier to excel in high speed applications. An extensive range of parameters allows for quick and flexible configuration of the unit, and all functions are easily adjusted via PROFINET IO with an IO-controller.

Functional Description

The analog force sensor feedback signals are input directly to a high resolution A/D-converter. Functions such as signal filtering, automatic offset compensation, and gain calculation are all digitized on the EMGZ492.PNET series amplifier. The measuring values of the connected force sensors A and B will be available as individual signals (A and B), as sum signal (A + B), as difference signal $|A - B|$ and as mean value $((A + B)/2)$. Additional processing of the feedback signal can then be carried out in a PLC under real time conditions. The PROFINET IO interface provides enhanced connectivity in your production line.



Electrical connection via RJ45 and detachable terminal blocks (IP 20).



Electrical connection via pg gland (internal, detachable terminal blocks) and M12 plug, 4 pole, D-coded (IP 65).

EMGZ492.PNET-Series : Technical Data	
Number of channels	2 channels for 2 or 4 force sensors
Power supply for force sensor	5 VDC, max. 80 mA, highly stable
Sensor feedback signal	± 9 mV (max. 11.25 mV); with option .V05 ± 2.5 mV (max. ± 3.125 mV)
Resolution A/D converter	± 32768 Digit (16 Bit)
Resolution D/A converter	0 to 4096 (12 Bit)
Measuring error	< 0.05 % FS
Connector for Interface	EMGZ 492.R: 2 x RJ-45, EMGZ 492.W: 2 x M 12 4-Pol, D-coded
Configuration	via PROFINET IO or webserver
Protection class	IP 20 (.R Version), IP 65 (.W Version)
Power supply	24 VDC (18 to 36 VDC) / 5 W
Temperature range	-10 to +50 °C (14 to 122 °F)
Weight	370 g / 0.82 lbs (.R Version); 470 g / 1.04 lbs (.W Version)
Analog output	-10 to 10 VDC

EMGZ492.PNET-Series : PROFINET Features	
Cycle time	0.5 ms for RT_CLASS_3, 1 ms for RT_CLASS_1
Baud Rate	100 Mbit/s
Topology recognition	LLDP, SNMP V1, Physical Device Record Objects
Cyclic process data	For channels A and B individually: Actual value in digits (ADC), actual value in (N), actual value in (lbf), actual value in configured unit, status. Actual value sum (A + B), actual value difference A - B , mean value (A + B)/2
Acyclic communication	Read and Write Record Service
Media redundancy	Media Redundancy Protocol (MRP) – Client
Supported protocols	RTC Real Time Cyclic Protocol, RT_CLASS_3 (synchronized), RT_CLASS_1 (unsynchronized), RTA Real Time Acyclic Protocol, DCP Discovery and Configuration Protocol, DCE/RPC Distributed Computing Environment/Remote Procedure Calls: Connectionless RPC, LLDP Link Layer Discovery Protocol, PTP Precision Transparent Clock Protocol,SNMP Simple Network Management Protocol
Identification & Maintenance	Reading and Writing of &I M1-3, Reading of I & M5
IRT Support	Yes, RT_CLASS_3, synchronous with network clock
Integrated Switch	2 Port
Asset Management	Yes
Additionally supported features	VLAN- and priority tagging
Remote Flash Update	Flash update routine for the upload of software updates
Web service	Configuration, measuring data queries via http (alternative configuration via PROFINET)
Multiple Application Relation	1 IO-AR, 1 Supervisory AR
PROFINET IO specification	V 2.3, legacy startup of specification V 2.2 is supported
Certification	PNIO version V 2.35, net load class: CLASS III, conformance class (CC-C)

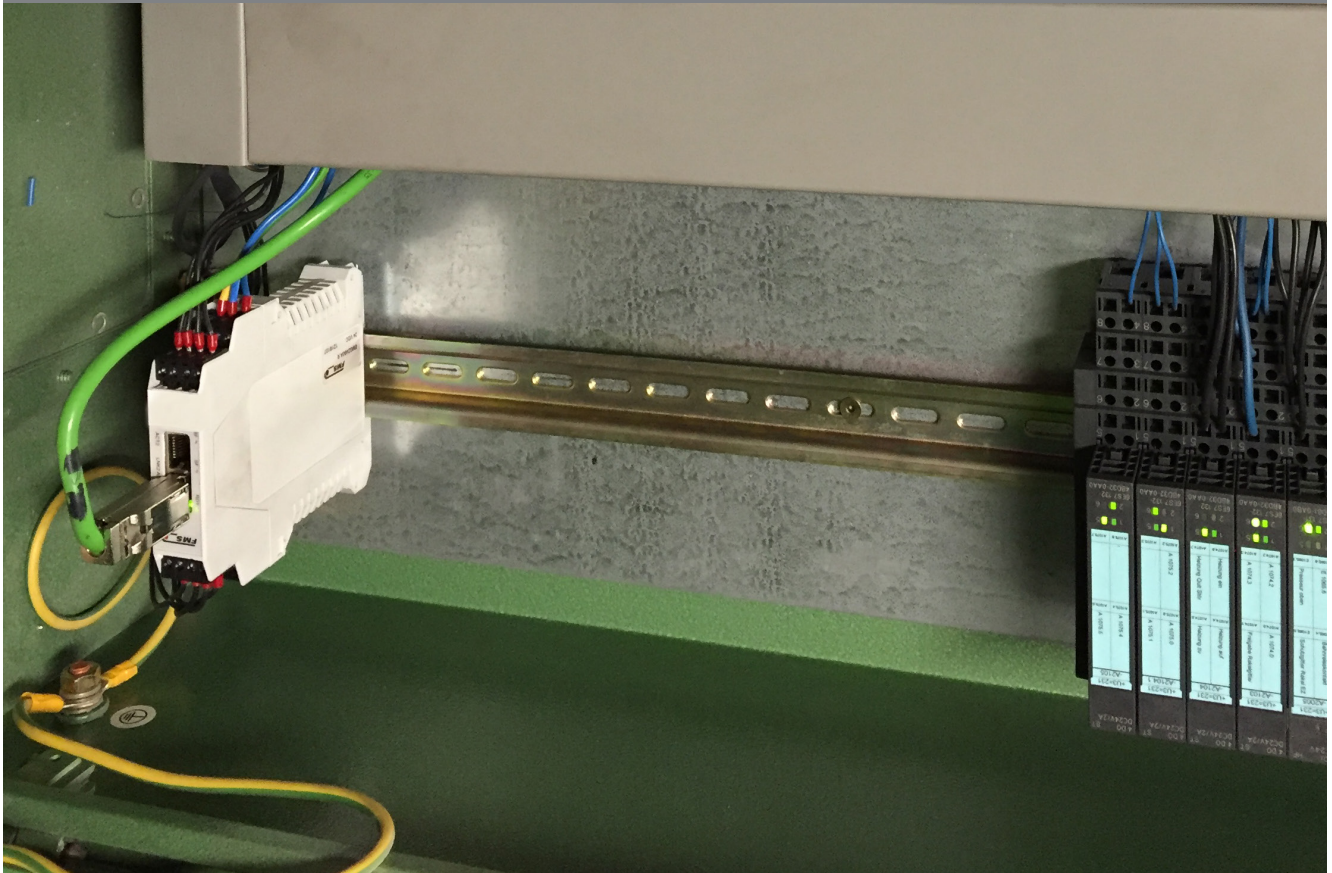
EMGZ492.PNET-Series : Order Code	
EMGZ492	.V05 .W .PNET
	PROFINET IO
	.W Version for wall mount, .R Version for DIN rail
	.V05 sensor feedback signal ± 2.5 mV (max. ± 3.125 mV)
	Series

EMGZ492.PNET-Series : Options	
.R	Version for DIN rail mount, IP 20
.W	Version for wall mount, IP 65
.V05	Sensor feedback signal ± 2.5 mV (max. ± 3.125 mV) for force sensors with a sensitivity of 0.5 mV/V

EMGZ492.PNET-Series : Scope of supply	
● Measuring Amplifier ● Installation and operation manual	

EMGZ492.PNET-Series : Accessories	
● Patch cable with RJ45 connectors ● M12 connectors D-coded	

EMGZ492.PNET-Series : Typical Application



Other products : Tension Control

Force Sensors	Tension Controllers	ATEX
		

About us

FMS Force Measuring Systems AG is the market leader in the field of web tension measurement, control and specialist for web guiding solutions. For the wire industry we are the only manufacturer offering a complete range of technologies for force measurement, data processing and radio transmission of signals.

Our in house developed products are used in the manufacturing industry, converting, metals, paper, textiles, as well as in cable and wire rope production. Utilising the latest technology, high quality components and a firm understanding of customer applications, FMS supports customers worldwide in the effort to maximize the productivity of their machines. Since 1993, our highly qualified employees have been creating high-end solutions for machine builders and plant operators. As an owner-managed company, we pride ourselves on being personal and approachable with the ability to make decisive moves fast.

World Headquarters: FMS Force Measuring Systems AG

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