EMGZ 492.PNET Dual-Channel Amplifier for PROFINET IO

- **PROFINET 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 ≥ 1 ms:**
  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

**EMGZ 492.PNET**

The EMGZ 492.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 I/O-controller.

**Functional Description**

The force sensor feedback analog 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 EMGZ 492.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.
EMGZ 492.PNET | Block diagram

EMGZ 492.PNET | 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
- **Input signal range**: ± 9 mV (max. 12.5 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 webservice
- **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**: 0 to 10 VDC

EMGZ 492.PNET | PROFINET Features

- **Cycle time**: 1 ms for RT_CLASS_1
- **Baud rate**: 100 Mbit/s
- **Topology recognition**: LLDP, SNMP V1, MIB2, physical device
- **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_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; PTCP Precision Transparent Clock Protocol; SNMP Simple Network Management Protocol
- **Identification & Maintenance**: Reading and Writing of I & M1-4. Reading of I & M5
- **IRT Support**: Yes, 2 port IRT switch (no IRT application)
  - This allows the free positioning of the device even in an IRT network
- **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 OP AR; 1 Supervisory AR
- **PROFINET IO specification**: V2.3, legacy startup of specification V2.2 is supported
- **Certification**: PNIO version V2.32, net load class: CLASS III, conformance class (CC-B)
EMGZ 492.R.PNET housing for DIN rail  |  Dimensions in mm [in]

99 [3.90"]  

22.5 [0.89"]

EMGZ 492.W.PNET housing for wall mount  |  Dimensions in mm [in]

94.1 [3.70"]

50 [1.97"]

110 [4.33”]

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).
EMGZ 492.PNET | Order code
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EMGZ 492.W.PNET PROFINET IO
.W Version for wall mount; .R Version for DIN rail

EMGZ 492.PNET | Scope of supply
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- Amplifier
- Installation and operation instruction

EMGZ 492.PNET | NOT included in scope of supply
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- Power supply (EMC Immunity specification EN 61000-4-2, 3, 4, 5; EN 55024 light industry level, criteria A)
- Patch cable
- RJ45 connectors
- M12 connectors

EMGZ 492.PNET | Options
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.R Version for DIN rail mount, IP 20
.W Version for wall mount, IP 65

EMGZ 492.PNET | Accessories
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Patch cable
RJ45 connectors
M12 connectors
D-coded

Other FMS Products | Tension Control
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Force sensors | Tension controllers | ATEX-Intrinsically safe barriers

EMGZ 492.R.PNET | Typical application

FMS Force Measuring Systems AG
FMS Force Measuring Systems AG is a worldwide market leader in the fields of tension measurement/control, web guiding, and specialized telemetry technologies. Our standard and custom solutions are applied in the converting, metals, paper, textile and wire & cable industries. FMS Force Measuring Systems AG’s advanced technology, high quality components and extensive application knowledge supports customers around the world in maximizing productivity. Since 1993 our highly skilled workforce have crafted superior solutions and set the benchmark in the industry.