

FMS Tension Control / Measuring Amplifier

EMGZ491.ECAT-Series Single-Channel Measuring Amplifier for ETHERCAT®

- **EtherCAT® Slave**
Simple integration into EtherCAT® networks
- **Configuration via EtherCAT®**
Easy configuration with parameter sets for demanding applications
- **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

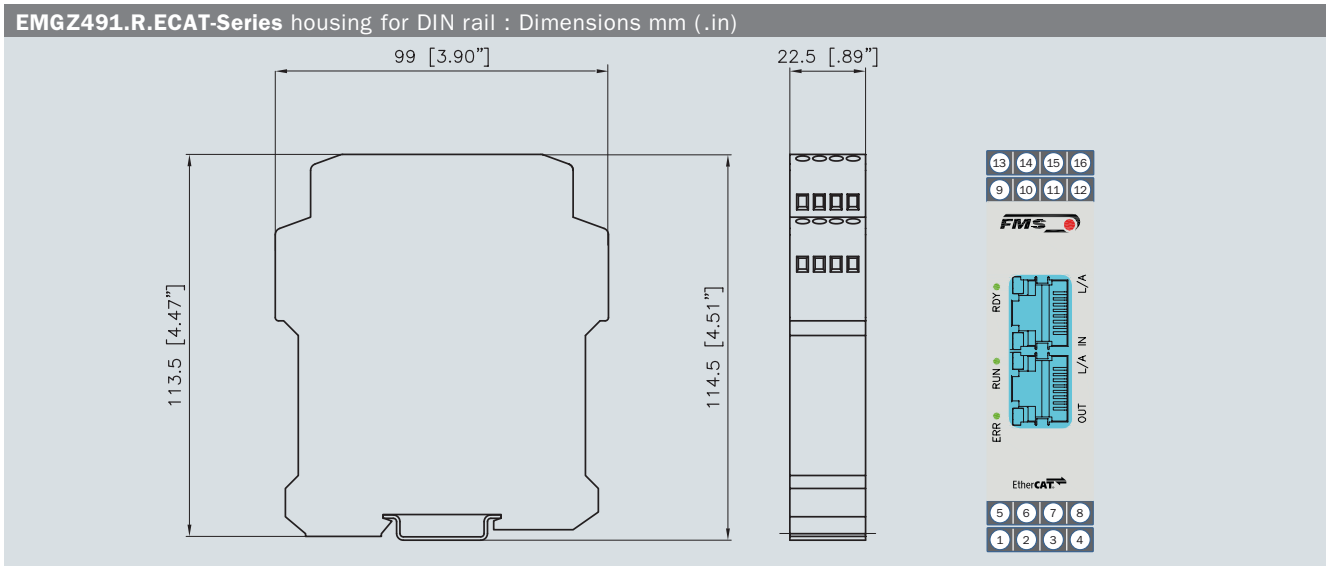
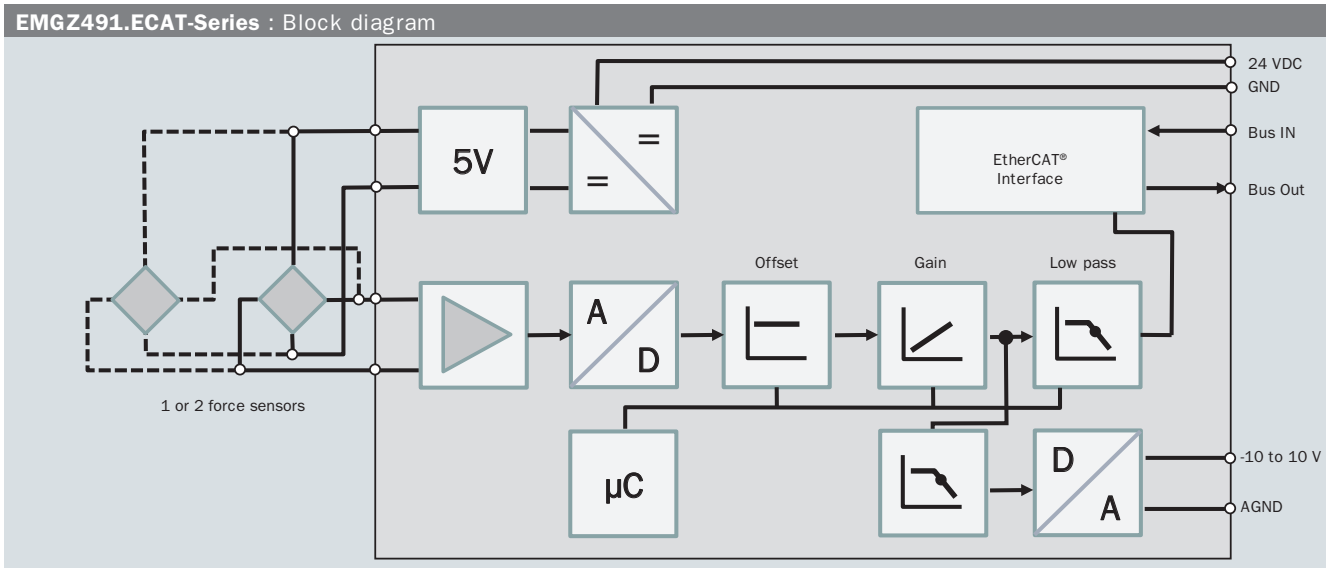


EMGZ491.ECAT-Series

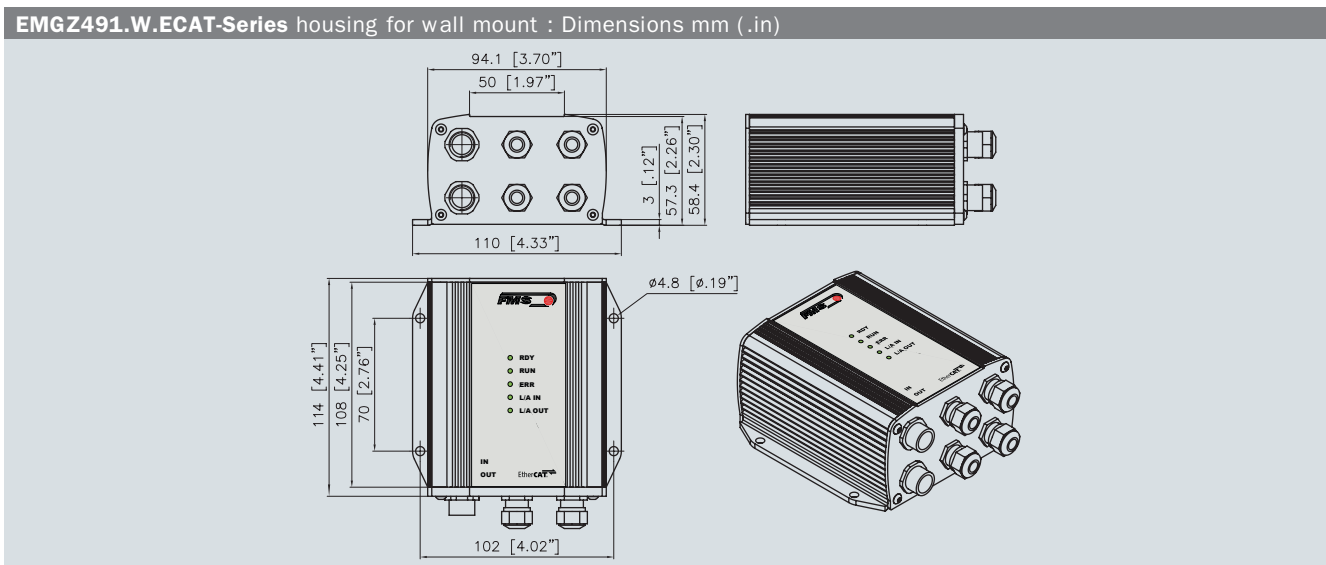
The EMGZ491.ECAT amplifier has been designed for use in modern EtherCAT® networks where a typical application involves the measurement or control of web tension in coating, laminating, printing, extrusion, or other similar roll to roll processes. Making full use of the EtherCAT® capabilities allows this 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 EtherCAT® with an EtherCAT® Master. EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

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 EMGZ491.ECAT series amplifier. In addition to the EtherCAT® fieldbus the device provides an analog output signal for further processing. The EtherCAT® interface provides enhanced connectivity in your production line. Additional processing of the feedback signal can then be carried out in a PLC under real time conditions.



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).

EMGZ491.ECAT-Series : Technical Data	
Number of channels	1 channel for 2 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 491.R: 2 x RJ-45 EMGZ 491.W: 2 x M 12 4-Pol, D-coded
Configuration	via EtherCAT® Master
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

EMGZ491.ECAT-Series : EtherCAT® Features	
Cycle time	≥ 1 ms in Free Run Mode
Baud Rate	100 Mbit/s
Cyclic process data	TxPDO with fixed mapping
Acyclic communication	SDO Master-Slave
Supported protocols	SDO server side protocol (CoE) File Access over EtherCAT® (FoE)
CoE (CAN application layer over EtherCAT®)	SDO Upload and SDO Download including SDO Complete Access, SDO Information Service (Object Dictionary)
Mailbox Size	SM0, SM1: 128 Byte, Bootstrap Mode: 1484 Byte
SII (Slave Information Interface)	4 kB
Type	Complex Slave
FMMUs	8
SYNC Manager	4
Explicit Device Identification	Set Device Identification by Configuration Tool
EtherCAT® Conformance	EtherCAT® Protocol (EtherCAT® Conformance Test Tool V2.2.1.0, EtherCAT® Conformance Test Record ETG7000-2 V1.2.8), ETG.1300 Indicator Specification; ETG.9001 Marking rules; Interoperability Test

EMGZ491.ECAT-Series : Order Code	
EMGZ491	.V05 .W .ECAT
	EtherCAT®
	.W Version for wall mount, .R Version for DIN rail
	.V05 sensor feedback signal ± 2.5 mV (max. ± 3.125 mV)
	Series

EMGZ491.ECAT-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

EMGZ491.ECAT-Series : Scope of supply	
● Measuring Amplifier ● Installation and operation manual	

EMGZ491.ECAT-Series : Accessories	
● Patch cable with RJ45 connectors ● M12 connectors D-coded	

EMGZ491.ECAT-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.

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