

## Strain Gauge Measuring Amplifier eNod4-T DIN



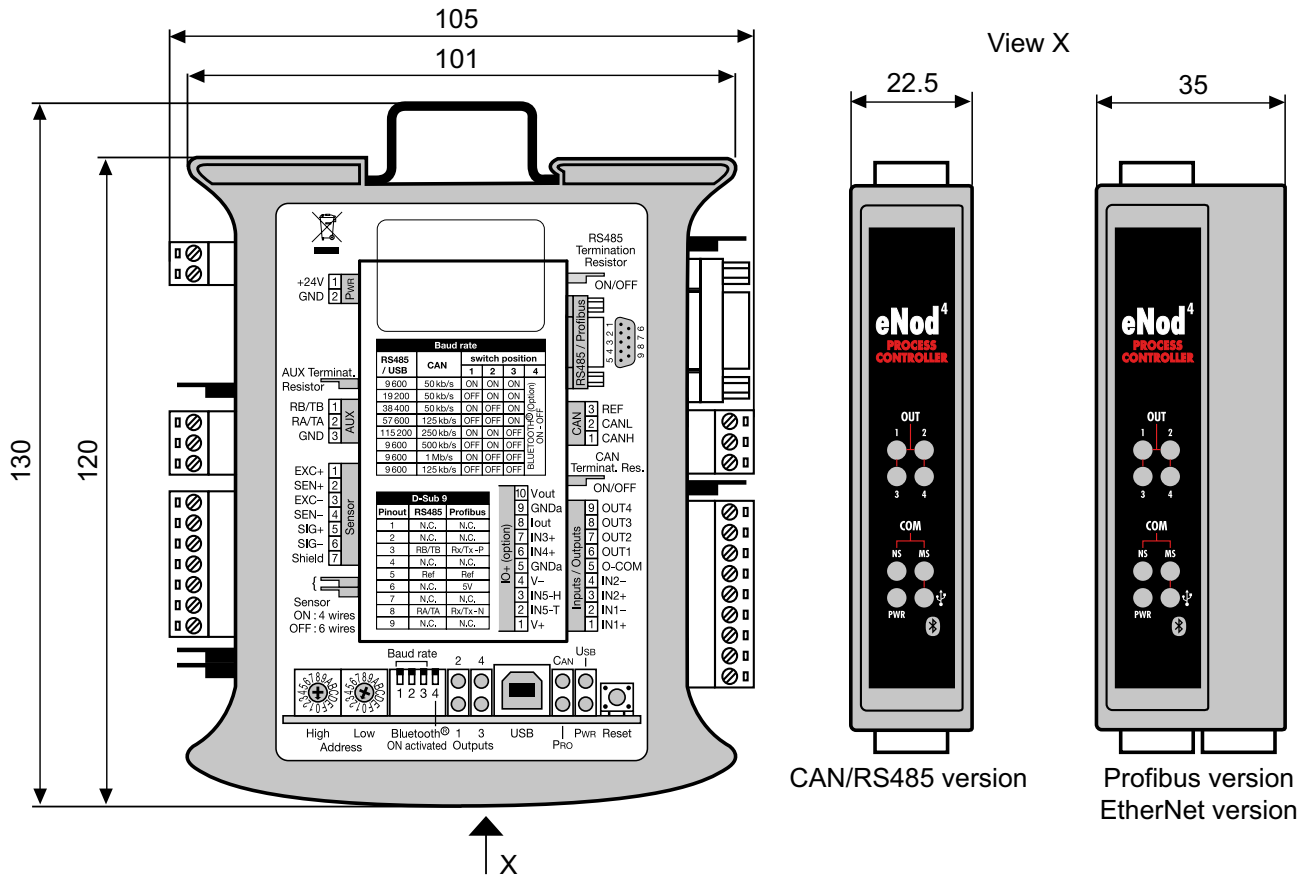
### Performance Features

- Signal processing for up to 8 strain gauge load cells
- 4- or 6-wire technology
- Compact housing for easy DIN rail mounting
- Certified according to OIML R76
- Programmable digital filters
- 2 digital inputs (4 for IO+ version) and 4 digital outputs
- Analog output 0 ... 10V or 4 ... 20 mA (version IO+)
- USB connection for PC and RS485 for HMI (Human Machine Interface) eNodTouch
- EtherNet version with integrated web server for easy operation and remote monitoring

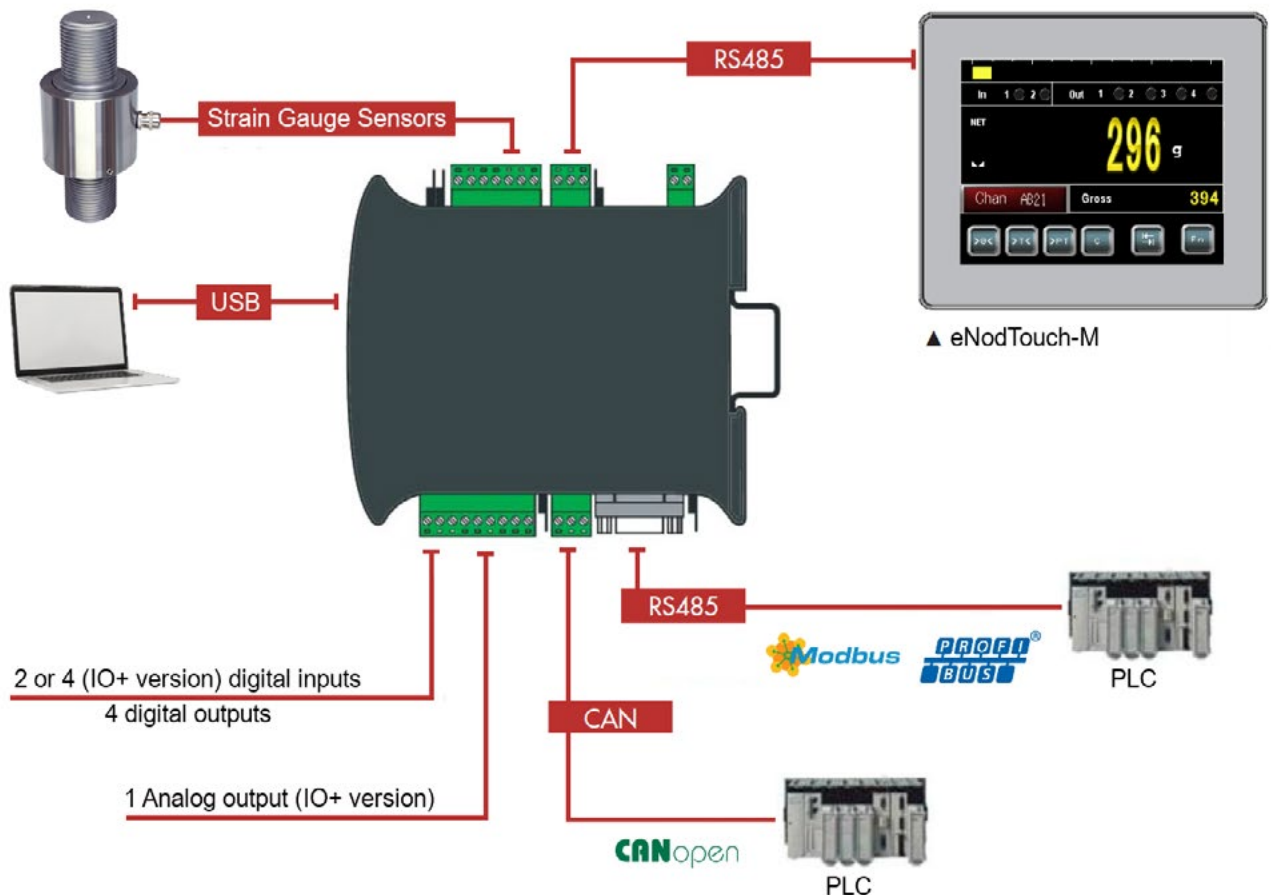
### Application

- **Fast, precise and reliable measurement**
  - Max. 1600 measurements/s, resolution:  $\pm 500000$  points
  - Detection of cable breaks
  - Diagnosis of the measurement chain, triggerable by PLC
- **Interfaces for PLC connection:**
  - **CAN / RS485 version**
    - 1 output Modbus-RTU or CANopen
  - **Version PROFIBUS**
    - 1 output PROFIBUS-DPV1
  - **Version EtherNet/IP (real-time Ethernet system)**
    - Dual port EtherNet switch with Modbus-TCP, EtherNet/IP, PROFINET or EtherCat as future-proof Industry 4.0-solution with integrated web server for remote monitoring and diagnostics
- **Integrated inputs/outputs for process control**
  - Up to 4 configurable digital inputs and 4 outputs: threshold, alarm, PLC controlled status
  - Configurable analog output (IO+ version): gross, net, value controlled by PLC
- **PC interface or optional HMI eNodTouch**
  - USB port for connection to PC with eNodView
  - 1 RS485 output for HMI eNodTouch. Allows autonomous use of the eNod4 with or without PLC.

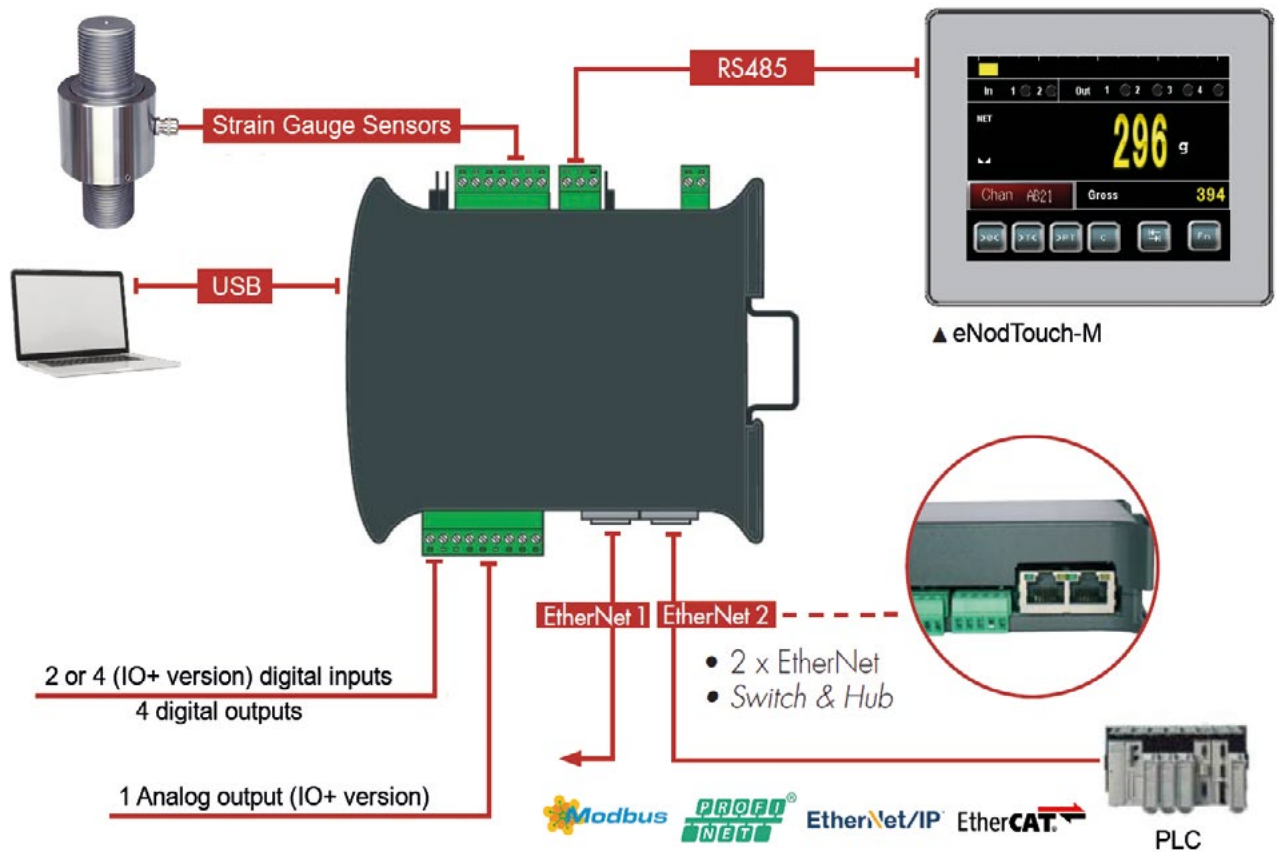
## Mechanical dimensions of eNod4-T DIN in mm



## Connection diagram CAN/RS485/PROFIBUS versions



## Connection diagram EtherNet versions



## General functions

### • Calibration

- Factory pre-calibrated (500000d at 2 mV/V)
- Physical or theoretical calibration
- 3 linearization segments
- Measurement scaling
- Measurement unit and decimal point management
- Gravity correction management

### • Digital filtering

- 4 digital filter stages ensures measurement accuracy and fast, stable measurement in harsh environments
- A/D converter low pass filter
- Digital low-pass filter, cut-off frequency and order parametrizable
- Bandstop filter with adjustable frequency ranges
- Auto adaptive filter for static weighing

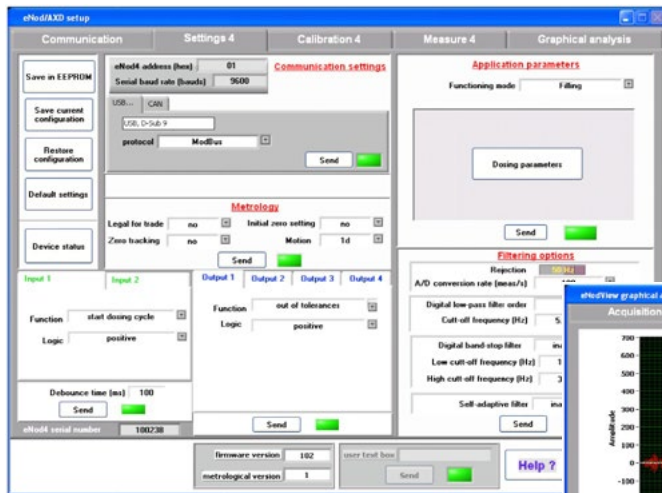
### • Measurement functions

- Zero point
- Zero point at power-on
- Zero follower
- Semi-automatic tare
- Measurement stability control

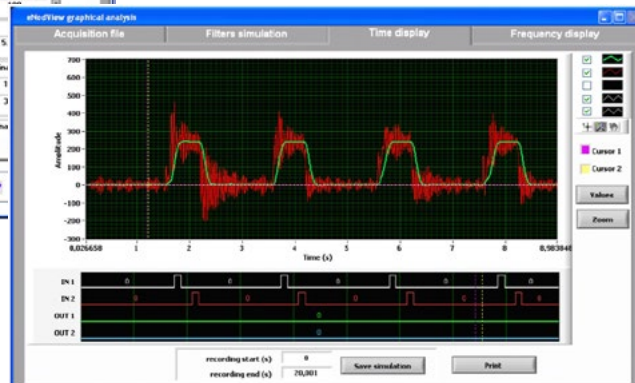
## Software application

### • eNodView PC Software

- Parameterization, calibration and eNod4 control
- Measurements, results and I/O (input/output) display
- Digital filtering optimization by FFT analysis and filter effect simulation

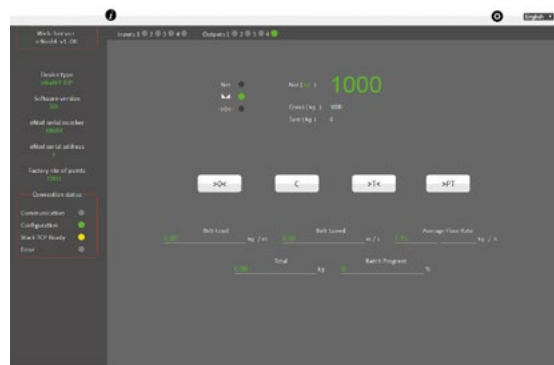
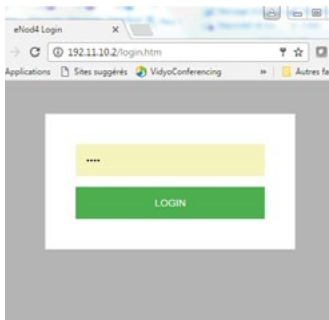


▼ Digital filtering with eNod4 and visualization with eNodView



### • Web-Server eNod4 Ethernet

- Reading/writing the parameters
- Display of measurements, results and I/O
- Remote control of eNod4
- Calibration of the measurement chain



## Technical Data

### General Data

Power supply	VDC	10 ... 28
Max. Consumption	W	2.2 CAN / 3.4 PROFIBUS / 4.4 EtherNet; IO+: 5.2 CAN / 6.4 PROFIBUS / 7.4 EtherNet
Excitation voltage	VDC	5
Input sensor range min. / max.	mV/V	±7.8
Min. input impedance sensor	Ω	43
Smallest measuring step	μV	0.02
Load cell connection		4-/6-wire technology
Housing	ABS	DIN Rail (DIN EN 50022)
Nominal temperature range	°C	-10 ... 40
Limit temperature range	°C	-20 ... 60

### Metrological Characteristics

Accuracy class	% F.S. <sup>1</sup>	±0.005
Temperature coefficient zero / characteristic value	%/K	±0.00015 / ±0.0002
Internal / scaled resolution	Bit/pts	24 / ±500000
Measuring rate	1/s	6 ... 1600

### Legal Metrology OIML

Accuracy class <sup>2</sup>		OIML R76 - III, IIII
Max. Number of extensions x intervals		1 x 6000d
Min. signal by verified interval	μV	0.5
Data storage device	Data records	>100000

### Digital Inputs/Outputs

	STD	IO+	
Digital inputs	2	4	Class 3: 11 ... 30VDC / 12.6 mA
Digital outputs (static relays)	4	4	24VDC / 400 mA max.
Analog output	-	1	
- Resolution			16 Bit
- Type			0 ... 5V / 0 ... 10VDC, 4 ... 20 mA / 0 ... 20 mA / 0 ... 24 mA
Galvanic insulation	-	✓	V 1000

### Interfaces

RS485 (Auxiliary) - Baud Rate	Bd	Half Duplex 9600 ... 115200	
USB		2.0	
Max. Update frequency of data (measurements) by the bus	CANopen	RS485/USB	EtherNet
	1000/s	200/s	100/s

### CAN/RS485 Version

RS485 (API) - Baud Rate - Protocols	Bd	Half Duplex 9600 ... 115200 Modbus RTU
Output CANbus/CANopen	A	CAN 2.0

### Profibus Version

Output Profibus-DPV1	Mbps	9.6 ... 12000
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### EtherNet Version

EtherNet Dual-Port -Protocols		100BASE-TX EtherNet/IP, Modbus-TCP, PROFINET, EtherCAT
EtherNet/IP		CLASS 1 cyclic, CLASS 3 acyclic, DLR (Device Level Ring)
PROFINET		PROFINET IO Field Device / MRP (Media Redundancy Protocol)
EtherCAT		Explicit Device / Data Word Identification

<sup>1</sup> Full Scale

<sup>2</sup> eNod4 with eNodTouch: Partial certificate display / eNod4 only: Partial certificate data processing unit

## Ordering data

Article-No.	Version	PLC-Interface
112909	eNod4-T-DI00-A00-SC	CANOpen / RS485 Modbus-RTU
112945	eNod4-T-DI00-A00-EP	EtherNet, Profinet
118205	eNod4-T-DI00-A00-EI	EtherNet, EtherNet/IP
118948	eNod4-T-DI00-A00-SP	Profibus-DP
118949	eNod4-T-DI00-A00-EM	EtherNet, Modbus-TCP
118950	eNod4-T-DI00-A00-EC	EtherNet, EtherCAT

## Accessories

eNodTouch-MS Touchscreen	eNodTouch-ML Touchscreen	eNodView Software
		

Further suitable accessories you can find on our homepage under:

[https://www.lorenz-messtechnik.de/english/products/lc\\_weighing-electronics.php](https://www.lorenz-messtechnik.de/english/products/lc_weighing-electronics.php)