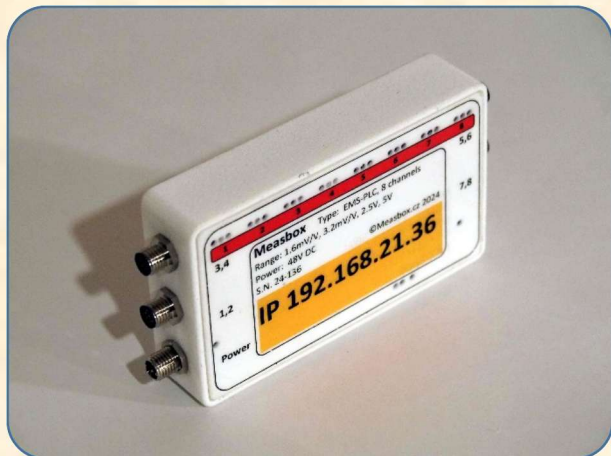


Measuring amplifier Measbox

Type EMS-PLC

Datasheet



Description

The EMS-PLC measuring amplifier (module) is used to measure signals from strain gauge bridges (electrical force gauges, strain scales, measurement of mechanical stress on structures) and to measure voltage signals (measuring potentiometers, acceleration sensors with voltage output). The module has 8 differential analog inputs with separately adjustable sensitivity. The sampling frequency is adjustable and common for all analog channels. All inputs are galvanically isolated from the power supply circuits. Data transfer is based on the standard TCP/IPv4 network protocol, the UDP protocol is additionally used. The module is powered and data transfer is two-wire (IEEE 1901, Homeplug AV). The two-wire connection allows for

relatively simple data transfer from rotating parts using sliding contacts. A separate TCP2PLC converter module is used to convert to a standard Ethernet medium (100BASE-TX). Up to 4 EMS-PLC modules can be connected to one converter. The EMS-PLC module parameters are set and the actual measurement is performed using the ADclient (MS Windows) measuring program. This program can simultaneously operate up to 32 measuring modules. The measured data from all channels within one EMS-PLC module are synchronous, data from different modules are synchronous within the TCP/IP protocol latency - the time shift between measured data from different modules is typically in the order of units to tens of ms. The analog input connectors are standard 8-pin, type M8. Each connector is used to connect 2 channels. The status of each channel is indicated by 3 LEDs.

PARAMETRY

Number of analog inputs	8
Measuring range - strain gauges ...	1.6, 3.2 mV/V
Measuring range – voltage	2.5, 5 V
Input resistance	1 M Ω
Sampling frequency	4000 – 16000 Hz
RMS noise	0.013% of measuring range
Bandwidth (-3dB).....	0 – 2400 Hz
Connect to master system.HomePlug AV 200Mbit Protocol	TCP/IPv4, UDP
Max. number of connected clients	4
Supply voltage	48 – 57 V DC
Power consumption (without sensors)	3 W
Sensor power supply	5 V
Max. total sensor current	0.4 A
Analog input connector	M8 8pin (M)
Degree of protection	IP55
Ambient operating temper. Range..	-20 °C .+50°C
Dimensions	129 x 67 x 25 mm
Weight	160 g

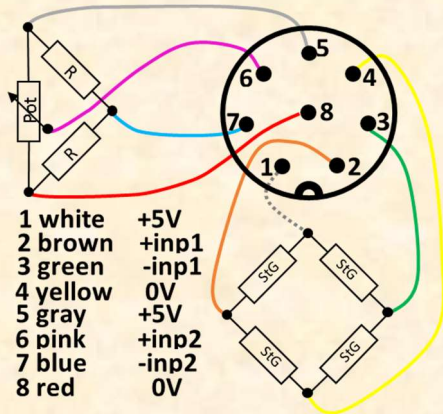
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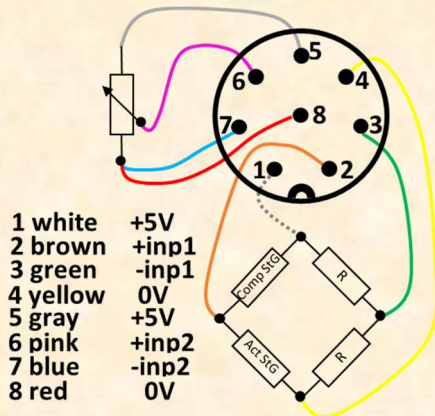
Connectors

Sensor connection – analog inputs (M8 connector, 8 pins, male)

Strain gauges and potentiometer – full bridge



Strain gauges and potentiometer – half bridge



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