

The intelligent data logger e.reader is designed to acquire 8 analog voltage, current, resistance or Pt100/Pt1000 signals. Additionally 6 digital in/outputs and 2 relays outputs are available.

Data access, I/O expansion, and configuration can be done via any of the communication interfaces RS 485 (3x), RS 232, or Ethernet.

Configurable logging intervals from 1s up to 24h and measurements can be logged into a 16 MB RAM or a 128 MB flash memory.

A selectable sleep mode causes the logger will wake up for one measurement and go to sleep again after storing the results. This extremely low power usage and make the unit great for autonomous applications.

Built-in PAC functionality provides complete programmability with built-in functions like sequencing, controlling mathematics and Boolean combinations.

I/O expansion is possible by adding any standard e.bloxx modules on the built-in RS-485 bus interface.

### 8 analog inputs

Voltage, current, resistance measurement, Pt100/Pt1000, and power supply for external sensors

### Analog/digital conversion

Resolution of 19 bit, sample rate 1 s up to 24 h

### 6 digital in/outputs and 2 relays outputs

Status, counter, frequency measurement

### Data memory with individual logging interval

128 MB flash, 16 MB RAM, 1 s up to 24 h individual per channel

### Low power consumption in power sleep mode

50 mW/200 mW at a sample rate of 10 min /10 s

### Flexible communications

RS485, RS232, Ethernet TCP/IP

Modem: FTP via PPP, GPRS via VPN Tunnel

FTP client and FTP server

email generator with data attachment



### Order Information:

Product	Article No.
e.reader	511373
Configuration software e.commander	234476
Accessories Ethernet crossover cable	496524

### Additional Features

- Accuracy up to 0.01 % (depends on the range)
- Power supply 10 to 30 VDC
- Temperature range -20 °C up to + 60 °C
- Pluggable screw terminals for field, power and communication connection up to 1.5 mm<sup>2</sup>
- DIN rail mounting (EN 50022 rail)
- Electromagnetic Compatibility according IEC 801-2/-3

# e.reader Technical Data

## Analog Inputs

Number	8		
Repeatability	0.003 % typical (within 24 h)		
<b>Measurement</b>	<b>Range</b>	<b>Accuracy</b>	<b>Resolution</b>
Voltage	±10 V	±2 mV	40 µV
(input impedance 100MΩ)	±5 V	±1 mV	20 µV
	±1 V	±0.2 mV	4 µV
	±100 mV	±20 µV	0.4 µV
	±10 mV	±10 µV	0.04 µV
Current	25 mA	±4 µA	80 nA
(internal shunt 100 Ω)	1 mA	±0.2 µA	4 nA
Resistance	20 kΩ	±5 Ω	0.25 Ω
(2, 4-wire, I = 0.5 mA)	4 kΩ	±1 Ω	0.05 Ω
	2 kΩ	±0.6 Ω	0.03 Ω
RTD (2-, 4-wire)			
Pt100 (-200 to +850 °C)		±0.5 °C	0.1 °C
Pt100 (-200 to +250 °C)		±0.2 °C	0.01 °C
Pt1000 (-200 to +850 °C)		±1 °C	0.1 °C
Pt1000 (-200 to +140 °C)		±0.3 °C	0.01 °C
Linearity deviation	0.01 % of the final value		
Temperature influence			
on zero	10 µV / 10 K		
on sensitivity	0.02 % / 10 K		

## Analog/Digital Conversion

Resolution	19 bit
in numbers	0.003 up to 0.01 % range dependent
sample rate	1 s up to 24 h
Conversion method	Sigma-Delta

## Digital In-/Outputs

Number	6
Inputs	
Functionality	Status, counter, frequency
Input voltage	max. 30 VDC
Input current	max. 1.5 mA
Input frequency	1 kHz
Outputs	
Functionality	Process- or host controlled
Contact	Open Collector
Output voltage	max. 30 VDC
Output current	max. 100 mA
Output frequency	max. 100 Hz

## Relay Outputs

Number	2
Functionality	normal open
Current	max. 1 A
Voltage	max. 60 VDC

## Data Memory

Flash (non volatile)	128 MByte
RAM (volatile)	16 MByte
Logging interval	1 s up to 24 h individual per channel

## Communication interfaces

RS485	3 1 Slave 1 Master and Slave 1 Master for connection of additional modules
RS232	1
Ethernet TCP/IP	1
Data format	8E1, 8N1, selectable
Protocols	ASCII, Modbus-RTU, Gantner LocalBus (binary), PPP
Baudrate	Local Bus up to 1500000 Baud others 2400 up to 115200 Baud

## Power supply and power consumption

Power supply	10 up to 30 VDC over voltage and overload protection
Power consumption at	
Sample rate of 10 min	approx. 50 mW
Sample rate of 1 min	approx. 150 mW
Sample rate of 10 s	approx. 200 mW
Sample rate of 1 s	approx. 4 W

## Mechanical

Case	Aluminium and ABS
Dimensions (W x H x D)	235 x 90 x 83 mm (9.25 x 3.54 x 3.27 in)
Weight	800 g (1.76 lb)
Protective system	IP20
Mounting	DIN EN-rail

## Environmental

Operating temperature	-20 °C up to +60 °C
Storage temperature	-40 °C up to +85 °C
Relative humidity	5 % up to 95 % at 50 °C non condensing

Valid from August 2007. Specification subject to change without notice.  
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