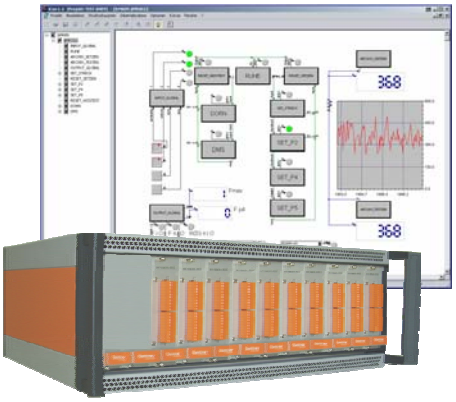
e.rack A4

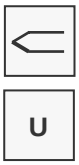
Multi-Channel Thermocouple and mV Plug-In



The e.rack series is designed for industrial and experimental test systems requiring precise high speed measurement of electrical, thermal, and mechanical quantities in engine and component test beds.

The e.rack series is a modular rack mount design, and easily connects to the wide variety of field devices used in today's test beds. Sample rates up to 1000 Hz and resolutions up to 19 bit are possible depending on the plug-in and signal type used. Standardized communication protocols (Profibus-DP and Modbus-RTU) allow the e.rack family to work with a wide variety of application hardware and software (including e.bloxx).

An optional Touch Screen Display, e.gate R, and e.pac R provides the full power and flexibility of the e.series in a rack mounted package.



8 analog, high speed, galvanic isolated channels

Thermocouple and ± 80 mV (100 samples/sec with 8 active channels)

Cold junction compensation

CJC per terminal strip (special terminal block required)

Dynamic linearization

Optimised linearization for the types B, E, J, K, L N, R, S, T, U

Signal conditioning

Digital filter, averaging, scaling, minimum/maximum, arithmetic, alarm

RS 485 fieldbus interface

Profibus-DP, Modbus-RTU, ASCII

Order Information

Product	Article No.
e.rack A4	327782
Accessories	
Configuration Software	
ICP 100	633214
Interface Converter	
RS232 / RS485	
ISK 200	236314
ISK 101	689326

Additional Features

- Accuracy 0.01 %
- ADC resolution and internal calculation accuracy of 19 bits
- Measuring rate 100 samples/sec per channel (4 active channels)
- Linearization, scaling, and data formatting

- Data transmission up to 1.5 Mbps
- PC-Software (ICP 100) for easy configuration of the modules

- Galvanic isolation of I/O signals, power supply, and communication interface
- Pluggable screw terminals for field, power, and communication connections
- Electromagnetic Compatibility according to EN 61000-4 and EN 55011

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e.rack A4 Technical Data

Analog Inputs

Accuracy	0.01 % typical 0.02 % in controlled environment[1] 0.05 % in industrial area[2]
Repeatability	0.003 % typical (within 24 h)

Measurement	Range	Accuracy	Resolution
Voltage	±80 mV	±30 µV	0.4 µV
Thermocouples			
Type B	better than ±5 °C		
Type E, J, K, L, T, U	better than ±1 °C		
Type N	better than ±2 °C		
Type R, S	better than ±3 °C		

Input resistance	> 10 MΩ
Common Mode Voltage	100 V permanent
Linearity deviation	0.01 % of the final value
Signal to noise ration	100 dB
Temperature influence	
on zero point	1µV / 10 K
on sensitivity	0.01 % / 10 K
Long-time drift	1 µV / 24 h

Analog/Digital Conversion

Resolution	19 bit
Sample rate	100 samples/sec at 8 active channels
Conversion method	Sigma-Delta
Filter	variable digital low pass filter 1st order averaging

Communication Interface

Standard	RS 485, 2-wire
Data format	8E1
Protocols	ASCII, Modbus RTU, Profibus-DP Local-Bus
Baud rate	
ASCII and ModBus	19.2; 38.4; 57.6; 93.75; 115.2 kBaud
Profibus-DP	19.2; 93.75; 187.5; 500; 1500 kBaud
Local-Bus	19.2; 38.4; 57.6; 93.75; 115.2; 187.5; 500; 1500 kBaud
Galvanic isolation	500 V

Power Supply

Power Supply	10 to 30 VDC overvoltage and overload protection
Power Consumption	approx. 3 W
Influence of the voltage	0.001 %/V

Environmental

Operating temperature	-20 °C to +60 °C
Storage temperature	-30 °C to +60 °C
Relative humidity	5 % to 95 % at 50 °C non condensing

Warm Up Time

All declarations are valid after a warm up time of 45 minutes.

[1] according to EN 61326: 1997, appendix B
[2] according to EN 61326: 1997, appendix A

Valid from October 2006. Specification subject to change without notice.
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