

The e.rack slimline 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 slimline is a low profile 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 unit and signal type used. Standardized communication protocols (Profibus-DP and Modbus-RTU) allow the e.rack slimline family to work with a wide variety of application hardware and software (including e.bloxx).

All of this measurement power is housed in a 1 unit (1U) 19" rack for unparalleled density. With the addition of an e.series controller (e.gate, e.pac, etc.) even the most sophisticated applications can be achieved with ease.



### 16 analog, high speed, galvanic isolated channels

Thermocouple and  $\pm 80$  mV, 19 bit at 100 samples/s

### Cold junction compensation

Integrated CJC each input

### Dynamic linearization

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

### Signal conditioning

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

### RS 485 fieldbus interface

Profibus-DP, Modbus-RTU, ASCII

### Order Information

Product	Article No.
e.rack A4-16 slimline	440980
Accessories	
Configuration Software	
ICP 100	633214
Input plug series 423 8 pole	423 8P
Interface Converter RS232 / RS485	
ISK 101	689326

### Additional Features

- Accuracy 0.01 %
- ADC resolution and internal calculation accuracy of 19 bits
- Measuring rate up to 100 samples/sec
- Linearization, scaling, and data formatting
- Data transmission up to 1.5 Mbps
- PC-Software (ICP 100) for easy configuration of the modules
- Compatible with all e.series controllers (e.gate, e.pac, etc.)
- Galvanic isolation of I/O signals, power supply, and communication interface
- Electromagnetic Compatibility according to EN 61000-4 and EN 55011

# e.rack A4-16 *slimline* Technical Data

## Analog Inputs

Number of analog inputs	16
Accuracy	0.01 % typical 0.02 % in controlled environment <sup>1</sup> 0.05 % in industrial area <sup>2</sup>
Repeatability	0.003 % typical (within 24 h)

Measurement	Accuracy
Thermocouples	
Type B	better than $\pm 5$ °C
Type E, J, K, L, T, U	better than $\pm 1$ °C
Type N	better than $\pm 2$ °C
Type R, S	better than $\pm 3$ °C

Input resistance	> 10 M $\Omega$
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	1 $\mu$ V / 10 K
on sensitivity	0,01 % / 10 K
Long-time drift	1 $\mu$ V / 24 h

## Analog/Digital Conversion

Resolution	19 bit
Sample rate	100 samples/sec
Conversion method	Sigma-Delta
Filter	variable digital low-pass filter 1 <sup>st</sup> 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 over voltage and overload protection
Power Consumption	approx. 10 W
Influence of the voltage	0.001 %/V

## Mechanical

Type	19" Standard, 1 unit
Dimensions (W x H x D)	
Basic housing	423 x 44 x 280 mm (16.65 x 1.73 x 11.02 in)
incl. plugs and assembly flange	483 x 44 x 335 mm (19.02 x 1.73 x 13.19 in)
Protection system	IP20

## Environmental

Operating temperature	-20 °C to +55 °C
Storage temperature	-30 °C to +55 °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.

<sup>1</sup> according to EN 61326: 1997, appendix B

<sup>2</sup> according to EN 61326: 1997, appendix A

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

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