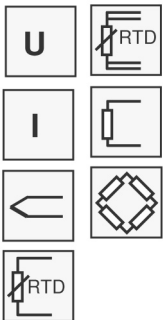




E Series - e.rack A1-16 Slimline Universal Analog Measurement Unit

Gantner
instruments



- **16 general purpose analog input channels**
Voltage, current, resistance, thermocouples, Pt100, Pt1000, bridges
- **High resolution fast A/D conversion**
19 bit resolution at 1000 samples/sec per channel
- **Signal conditioning**
Linearisation, digital filtering, averaging, scaling, minimum/maximum storage, arithmetic, alarm
- **RS 485 fieldbus interface**
Profibus-DP, Modbus-RTU, ASCII

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.

Order Information

Product	Article No.
e.rack A1-16 slimline	440879
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 1000 samples/sec
- Linearisation, 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

Specifications

Analog Inputs

Number of analog inputs	16		
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	±10 V	±2 mV	40 µV
	±1 V	±0.2 mV	4 µV
	±100 mV	±20 µV	0.4 µV
	±10 mV	±10 µV	0.04 µV
Current	4-20 mA	±4 µA	80 nA
(internal shunt 100 W)	±20 mA	±4 µA 8	0 nA
Resistance	4 kW	±1 W	0.05 W
(2-, 3- and 4-wire)	2 kW	±0.6 W	0.03 W
Bridge	±1000 mV/V	±1 mV/V	50 µV/V
(Supply 5 VDC/120 W)	±200 mV/V	±200 µV/V	10 µV/V
	±20 µV/V	±20 µV/V	1 µV/V
	±8 mV/V	±8 µV/V	0.4 µV/V
	±2 mV/V	±2 µV/V	0.1 µV/V
RTD (2-, 3- and 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
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 MW		
Common mode voltage	500 V permanent		
Linearity deviation	0.01 % of the final value		
Signal to noise ratio	voltage measurement		
1 kHz	90 dB		
1 Hz	120 dB		
Temperature influence			
on zero	1µV / 10 °K		
on sensitivity	0.02 % / 10 °K		
Long-time drift	1 µV / 24 h; 0.1 µA / 24 h		

Analog/Digital Conversion

Resolution	19 bit
Sample rate	1000 samples/sec for voltage, current potentiometer, bridge 10 samples/sec for resistance, RTD 5 samples/sec for thermocouples
Conversion method	Sigma-Delta
Filter	Anti-aliasing Bessel filter 4th ord. 200 Hz variable digital low-pass filter 1st order averaging, sliding averaging

Communication Interface

Standard	RS 485, 2-wire
Data format	8E1
Protocols	ASCII, Modbus-RTU, Profibus-DP Local-Bus
Baud rate	
ASCII and ModBus-RTU	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. 30 W
Influence of the voltage	0.001 %/V

Mechanical

Type	19" Standard, 1 unit
Dimensions (W x H x D)	
Basic housing	444 x 44 x 280 mm
incl. plugs and assembly flange	483 x 44 x 335 mm
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.

¹ according to EN 61326: 1997, appendix B

² according to EN 61326: 1997, appendix A