



The e.wave series is designed for industrial and experimental measurement and test systems, especially for measurement of electrical, thermal and mechanical quantities in the field of component testing.

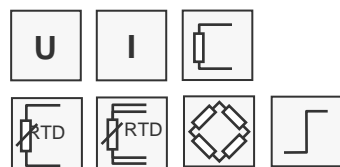
The compact stackable housing can contain up to 8 measuring channels. The wide variety of connection possibilities, as well as a precise and powerful signal conditioning characterises the e.wave series. All measuring channels are galvanically isolated.

With the PAC-versions comprehensive data memory are available, as well as mathematical calculations, Boolean connections, sequencing and control functions.

Standardized interfaces RS485 or Ethernet TCP/IP allow the configuration of networks with several devices.



Front and back view e.wave A1-8 pac



8 general purpose analog input channels

Voltage, current, resistance, Pt100, Pt1000, bridges

1 digital input and 1 digital output per channel

Status, tare, memory reset, alarm, limit value

Programmable Automation Controller

Extensive function library, e. g. mathematical calculations, combinations, extensive signal conditioning, signal generators, test sequencing, processing

Measuring data memory

16 MByte RAM and 128 MByte Flash memory
e. g. 32 Mio. floating point values

Ethernet TCP/IP Interface

Order information:

Product	Article No.
e.wave A1-8 pac	614680
Accessories	
Configuration Software	
e.commander	234476
Graphical programming tool	
e.con - Lite	438987
e.con - Advanced	304373
Ethernet Patch cable	496524

Additional features

- Accuracy 0.01
- ADC resolution and calculation accuracy of 19 bit /1000 Hz
- Data rate up to 1000 measurements per s per channel
- Linearization, Scaling and data formatting
- PC-Software e.commander for easy configuration
- Graphic interface for the PAC function
- Galvanic isolation of I/O signals, power supply and communication interface
- Power supply 10...30 VDC
- Sensor connection over 15 pin D-Sub plug
- Electromagnetic Compatibility according to EN 61000-4 and EN 55011

e.wave A1-8 pac Technical Data

Analog Inputs

Number	8		
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 (internal Shunt 100 Ω)	4-20 mA	±4 µA	80 nA
	±20 mA	±4 µA	80 nA
Resistance (2-, 3- und 4-wire)	4 kΩ	±1 Ω	0.05 Ω
Bridge (Supply 5 VDC/120Ω)	±1000 mV/V	±1 mV/V	50 µV/V
	±200 mV/V	±200 µV/V	10 µV/V
RTD (2-, 3- and 4-wire)	±20 mV/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
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
Input resistance	> 10 MΩ		
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	1 µV / 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, Sigma-Delta
Conversion method	Anti-aliasing Bessel filter 4 th ord. 200 Hz variable digital low pass filter 1 st order averaging, sliding averaging
Filter	

Digital In-/Output

Input	Status, tare, reset
Input voltage	max. 30 VDC
Input current	max. 1.5 mA
Upper switching threshold	> 10 V (high)
Lower switching threshold	< 2.0 V (low)
Output	Relay output
Contact	Opto – MOSFET
Nominal load	60 VDC / 100 mA (ohmic load)
Galvanic isolation	500 V

Host Interface Ethernet

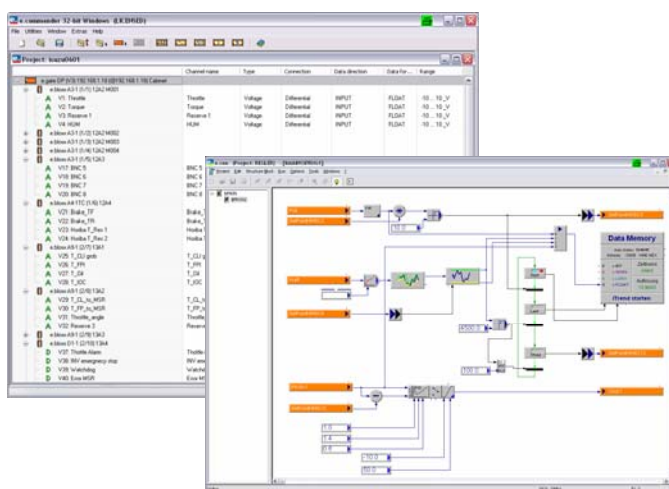
Protocols	TCP/IP, UDP, PING, ASCII, Modbus TCP/IP
Services	DHCP, FTP-Server
Baud rate	10/100Mbps
Number of synch. clients	max. 10
Galvanic isolation	500 V

Independent from operating system

Standardized Interface	Ethernet (FTP/Berkeley-Socket)
------------------------	--------------------------------

Configuration

Configuration Software	e.commander
PAC Programming System	e.con



Power Supply

Power Supply	10 to 30 VDC Over voltage and overload protection
Power consumption	approx. 17 W
Influence of the voltage	0.001 %/V

Mechanical

Case	Aluminium
Dimensions (B x H x T)	(330 x 142 x 270) mm
Protective system	IP20

Environmental

Operating temperature	-20 °C to +40 °C
Storage temperature	-30 °C to +60 °C
Relative humidity	0 % to 95 % at 40 °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 2007. Specification subject to change without notice.

DB_EWAVE_A1-8pac_E_10.doc