

Expert Key – PC-supported measurement technology

Complete measurement data acquisition system

Expert Key devices acquire and monitor measurement data and automate experiment and test stand installations. The devices are supplied as complete systems with ProfiSignal Go – professional software for the online or offline monitoring and analysis of measurement data.

Expert Key is available in four models: for laboratory (L), industry (C), testing (P) and temperature measurement (T). Expert Key is therefore a universal and quick to deploy data acquisition system for permanent or mobile systems.

Expert Key is a compact device with a wide range of analog and digital inputs / outputs and plug-in terminals. Expert Key has two alternative interfaces: USB and LAN. These enable measurement data to be acquired locally at a PC or, for example, transmitted from a test stand via a company LAN. Expert key enables fast system set-up and mobile measurement with a laptop and the ProfiSignal Go software. Expert Key is also suitable for permanent installations using cabinet systems.

Flexible

Expert Key devices are available with a range of channel numbers. Type 100 is equipped with a wide range of analog and digital inputs and outputs and is therefore highly suited for use within test engineering.

Type 200 has 28 universal inputs and is highly suited for analog data acquisition.



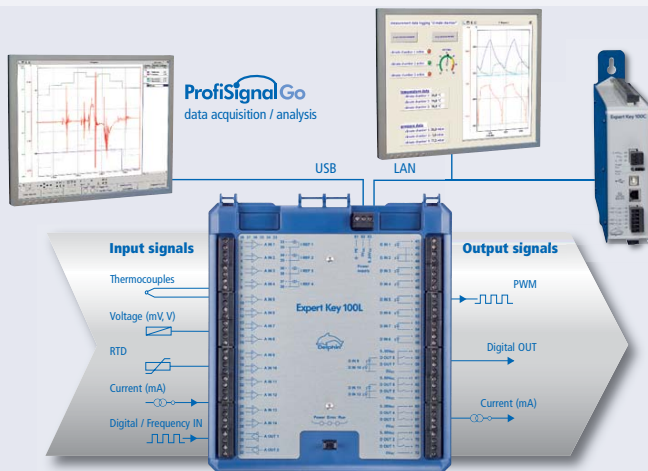
Technical specifications are available on page 44.

Expert Key		
Type	100	200
Analog inputs (mV, mA, TE, RTD)	14	28
Analog outputs (mA, V)	2	2
Digital inputs (frequency, counter) ¹	12	1
Digital outputs ²	8	1

¹ 4 switchable as digital outputs

² 4 with PWM function

Expert Key models



Product features

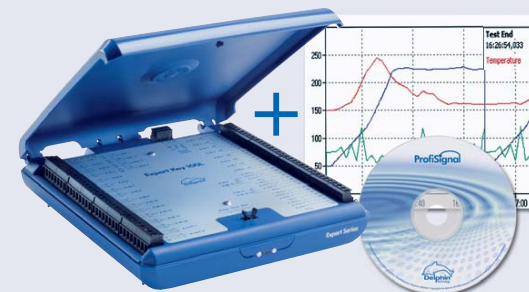
- Complete hardware and software package
- Very cost effective
- Communicates via USB or LAN
- Universal inputs and outputs
- Scalable, even for large applications
- Synchronizing of multiple devices
- Includes full ProfiSignal Go software
- Ease of operation
- Drivers for LabVIEW™, Modbus, OPC, DASYLab™ etc.
- "Made in Germany" quality

Universal connectivity

Differential inputs are used exclusively as input signals. These can be configured individually as mA, mV or V signals and as RTDs or thermocouples. Any sensor can be attached to the terminals which are able to accommodate lines of up to 2,5 mm² in diameter. Integrated signal conditioning enables mA, V measurement data to be converted into the required unit of measurement, e.g., bar, N, %rh etc. In contrast to many low-cost products, Expert Key devices are equipped with full potential isolation.

Analog input sampling rates achieve 100,000 measurement values per second. Analog output signals can be output to V or mA switchable outputs.

Digital inputs (with counter functions of up to 1 MHz) and digital outputs (with PWM function) with switch capacities of up to 30 W are standard in the 100 version.



Complete system including software

Channels are easy to configure using the powerful ProfiSignal Go software included in the Expert Key delivery. ProfiSignal Go has the following drivers to enable integration into the user's existing software systems: LabVIEW™, DASYLab™, OPC-Server, Modbus TCP driver for deployment in industrial environments, as well as the OXC driver and .NET programming interfaces.

Expert Key – Models

Expert Key L – for laboratories and service

The Expert Key 100L and 200L have a tabletop design. A pop-up lid gives a clear overview of connections. Sensors and actuators are connected via plugs located on the sides. Because of the L model's universal capabilities, it is particularly suited to laboratory, experiment, test and service applications. Brackets for wall-mounting are included in the delivery as well as a power supply adapter.



Expert Key 100L
Expert Key 200L

Expert Key C – for cabinet installation

The Expert Key 100C and 200C are identical to the L models apart from the housings. The housing design enables the devices to be used in cabinets or 19" rack systems.

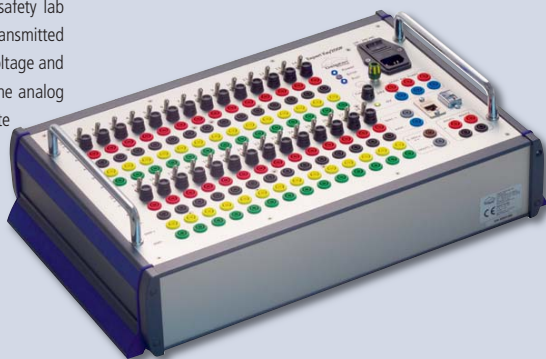
Expert Key can also be supplied without an housing to enable OEM systems.



Expert Key 100C
Expert Key 200C

Expert Key P – for experiments and testing

The Expert Key 100P and 200P have a console-type design. These models are intended for use in testing and laboratory environments. Signals are connected via 4 mm safety lab plugs. Measurement data from sensors can be transmitted to a PC via USB or LAN interfaces. RTD sensors, voltage and current signals are directly connected to any of the analog inputs. ProfiSignal software enables users to generate systems for data acquisition that comply to FDA 21 CFR Part 11.



Expert Key 100P
Expert Key 200P

Expert Key T – multi-channel temperature measurement

The devices, designed for multi-channel temperature measurement but also suited to temperature measurement and combined high-speed signal acquisition.

The compact Expert Key T devices have console-type housings. They are intended for use in laboratories and test stands as tabletop or wall-mounted devices. The analog and digital inputs and outputs are easy to access and signals and actuators are quick to connect requiring no tools.



Expert Key 100T
Expert Key 200T

Expert Key – Technical specifications

Expert Key

Device type	100	200
Analog inputs	14	28
Current source for RTD	4	8
Sensor types	mV, mA, thermocouples, RTD, Pt100(0)	
Resolution	18 Bit	
Sampling rate	100 kHz	
Measurement range	$\pm 100, 200, 500$ mV; $\pm 1, 2, 5, 10$ V	
Compensation	yes / 1	yes / 2
Galvanic isolation	yes	
Analog outputs	2	2
Resolution	16 Bit	
Max. output rate	50 Hz	
Output voltage / current	0 ... 10 V / ± 10 V / 0 ... 20 mA / 4 ... 20 mA / ± 20 mA	
Galvanic isolation	yes	
Digital inputs ...	8 to 12	1
Input voltage / current	5 V, 12 V, 24 V, 48 V / 2,7 mA	
Logic voltage level	< 2,5 V = low / > 3 V = high	
Max. input frequency	1 MHz or 10 kHz	
Galvanic isolation	yes	
... with counter function	8 to 12	1
Counter resolution	64 Bit	
Max. input frequency / resolution	1 MHz / 1 μ s or 10 kHz / 100 μ s	
Measurement range	0,1 Hz ... 1 MHz or 10 kHz	
Max. input voltage / current	5 V, 12 V, 24 V, 48 V / 1,5 mA	
Galvanic isolation	yes	
Digital outputs ...	4 to 8	1
Max. switching voltage / current	30 V / 1 A or 40 V / 0,75 A or 50 V / 0,6 A	
Max. output rate	10 Hz	
Galvanic isolation	yes	
... with PWM function	4	1
Duty cycle	1:100 ... 1:500	
Max. switching voltage / current	30 V / 1 A or 40 V / 0,75 A or 50 V / 0,6 A	
PWM basic frequency	5 Hz ... 10 kHz	
Galvanic isolation	yes	
General technical information		
Sensor connection	via screw terminals with 0,14 ... 2,5 mm ² openings	
Power supply	External power supply	
Max. power input	6 Watt	
Power supply	9 ... 24 VDC	
Temperature range	0 ... 50 °C	
Environmentally friendly	RoHS conform	
Interfaces: USB or Ethernet	USB 2.0 high speed / LAN 100 BaseT	
Expert Key L 100/200 dimensions	50 x 185 x 215 mm	
Expert Key L 100/200 weight	750 g	
Expert Key C 100/200 dimensions	57 x 280 x 208 mm	
Expert Key C 100/200 weight	1.500 g	
Expert Key P 100/200 dimensions	495 x 135 x 305 mm	
Expert Key P 100/200 weight	6.500 g	
Expert Key T 100/200 dimensions	495 x 135 x 305 mm	
Expert Key T 100/200 weight	6.500 g	