

Portable Handheld Data Logger

OM-DAQPRO-5300-UNIV



- ✓ **8-Channel Data Logger—Measures Voltage; Current; Pt100 RTD; J, K, T Thermocouples; 2252 Ω or 10 K Ω Thermistors; Frequency/Pulse Input**
- ✓ **Alarm Output**
- ✓ **16-Bit Sampling Resolution**
- ✓ **Fast USB Communications**
- ✓ **Rapid Sampling—Up to 4000 Samples/Sec (Single Channel Burst Mode)**
- ✓ **Large Data Storage—512 KB RAM**
- ✓ **Graphical Display—Shows Collected Data as Measured Values, Graphs or Tables**
- ✓ **Multiple Logging Sessions—Stores up to 100 Recording Sessions**
- ✓ **Powerful Analysis Software for Windows XP/VISTA/7**

The OM-DAQPRO-5300-UNIV is an 8-channel portable data acquisition and logging system with graphic display and built-in analysis functions. The data logger is powered by an internal rechargeable battery and is capable of sampling, processing and displaying measurements without being connected to a computer.

The OM-DAQPRO-5300-UNIV is a professional, cost-effective, compact and stand-alone data logging system that can be used with a wide variety of applications. This 16-bit, high-resolution, 8-channel data logger has graphic displays and analysis functions for measuring voltage, current and temperature in real time. With its high-resolution and fast analog-to-digital converter (ADC), the OM-DAQPRO-5300-UNIV meets the majority of data logging requirements in most industrial applications. Its unique ability to display measured values and analyze them in real time on a graphical interface minimizes the need to download collected data to a computer for further analysis.



OM-DAQPRO-5300-UNIV.

Every OM-DAQPRO-5300-UNIV data logger is embedded with a unique serial number and can be loaded with a descriptive comment for safe identification.

The data logger is very easy to use because all its functions are broken down into an 8-icon menu. The four buttons on the data logger's front keypad can be used to browse every menu and execute any of the commands.

Inputs

The OM-DAQPRO-5300-UNIV has eight input channels for measuring voltage, current, temperature and pulses. User-selectable input types/ranges are 0 to 24 mA, 0 to 50 mV, 0 to 10 V, 2252 Ω or 10 K Ω thermistors, PT100 RTDs, type J/K/T thermocouple temperature sensors, internal temperature, pulse counter, frequency meter and up to 20 user-defined sensors (used for scaling analog voltage or current inputs in engineering units).

The OM-DAQPRO-5300-UNIV can record data from up to eight 2-wire or four 3-wire PT100 RTD inputs (two input channels are required for each 3-wire PT100 RTD input connected). Frequency/pulse counter is only available for input 1.

The data logger provides a simple and straightforward tool for defining up to 20 custom sensors.

Almost any 0 to 10 V and 4 to 20 mA sensor or transducer can be displayed and scaled in meaningful engineering units, e.g., psi or gpm. The sensor definitions are stored in the data logger's memory and are added to the sensors list. The sensor's readings are displayed in the user-defined units both on the OM-DAQPRO-5300-UNIV's LCD screen and the Windows software.

The inputs use pluggable screw terminal blocks for easy connection. An internal clock and calendar keep track of the date and time of every sample measured.

The OM-DAQPRO-5300-UNIV data logger includes Windows software on CD ROM, Universal 100 to 240 Vac adaptor, USB cable, operator's manual and carrying case.



OM-DAQPRO-5300-UNIV, with sensors, shown smaller than actual size

Outputs

The OM-DAQPRO-5300-UNIV can automatically activate an external alarm device, e.g., energize an audible alarm or turn on a warning light, when an input channel is outside a specified range (Input/Output 8 serves as either an input or an alarm output). The external alarm device (audible or visual alarm) is connected to the screw terminals of Input/Output 8. The alarm output is an open collector output, which is analogous to an electrical switch. High/low alarm levels and also whether the alarm output is activated during an out-of-limit condition can be set for each input channel individually.

Windows Software

The OM-DAQPRO-5300-UNIV system also comes with powerful Windows software. When the data logger is connected to a PC, live displays can be viewed at rates of up to 100 samples/sec, and automatic downloads can be carried out at higher rates.

The software can display the data in graphs, tables or meters; analyze data with various mathematical tools; or export data to a spreadsheet. The Windows software also enables you to set up the data logger and to send advanced commands such as alarm settings, triggering conditions and text notes.

Applications

- Quality Assurance
- Plant and Machine Condition Monitoring
- Field Monitoring Stations
- Automotive Testing
- HVAC
- Plant Trouble-Shooting
- Electricity Transients Failure Detection
- Environmental Monitoring
- Monitor Food, Drug and Electronic Equipment Storage Conditions
- Water Quality Testing
- Research

Specifications

INPUTS

Number of Inputs: 8 differential analog inputs

Input Type: Selectable type for each input: 0 to 24 mA, 0 to 50 mV, 0 to 10 V, 2252 Ω or 10 K Ω thermistor, PT100 RTD, J/K/T thermocouple, pulse and frequency (input 1 only)

0 to 24 mA

Range: 0 to 24 mA
Resolution: 4.76 μ A
Accuracy: $\pm 0.5\%$ FS
Loop Impedance: 21 Ω

0 to 50 mV

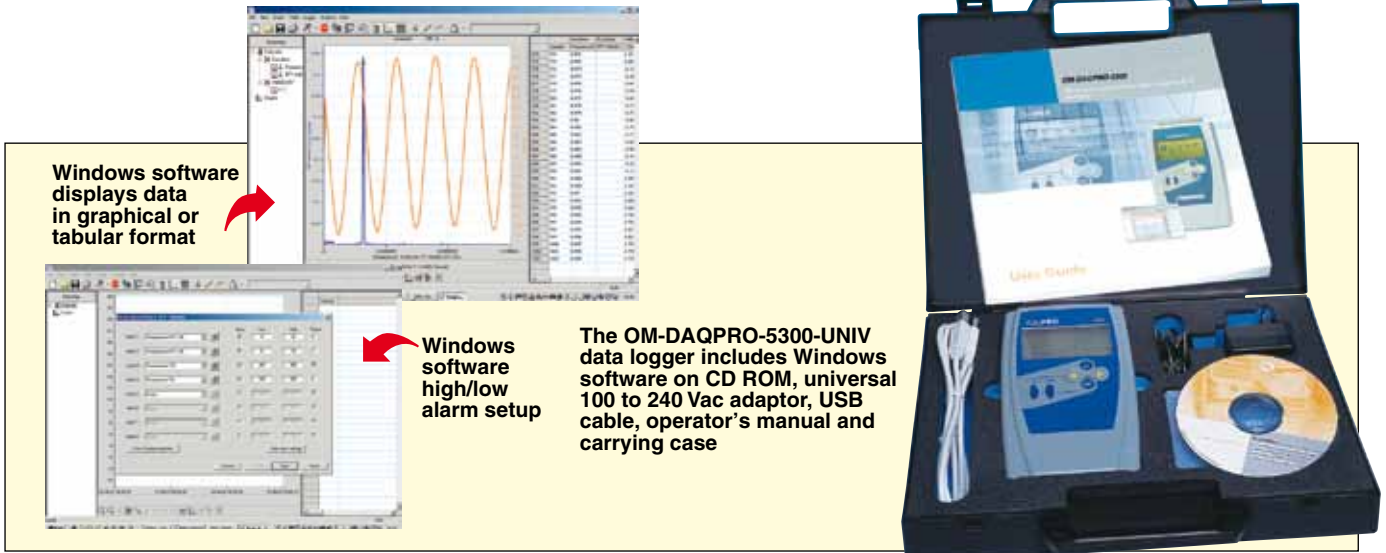
Range: 0 to 50 mV
Resolution: 3 μ V
Accuracy: $\pm 0.5\%$ FS
Input Impedance: 50 M Ω

0 to 10 V

Range: 0 to 10 V
Resolution: 200 μ V
Accuracy: $\pm 0.5\%$ FS
Input Impedance: 125 K Ω
TEMPERATURE THERMISTOR
Thermistor Type: 2252 Ω /10 K Ω Thermistor (OMEGA 44000 Series)
Range: -25 to 150°C (-13 to 302°F)
Resolution: 0.05°C
Accuracy: $\pm 0.5\%$ FS

TEMPERATURE PT100 RTD

RTD Type: 100 Ω Pt RTD, alpha = 0.00385
Range: -200 to 400°C (-328 to 752°F)
Resolution: 0.1°C (7 m Ω)
Accuracy: -200 to -50°C, $\pm 0.5\%$ of reading; 50 to 400°C, $\pm 0.5\%$ of reading; -50 to 50°C, $\pm 0.5\%$
No. of RTD Inputs: Up to eight PT100 2-wire channels or four PT100 3-wire channels



Windows software displays data in graphical or tabular format

Windows software high/low alarm setup

The OM-DAQPRO-5300-UNIV data logger includes Windows software on CD ROM, universal 100 to 240 Vac adaptor, USB cable, operator's manual and carrying case

INTERNAL TEMPERATURE

Range: -25 to 70°C (-13 to 158°F)

Resolution: 0.1°C (1µV)

Accuracy: ±0.5°C

PULSE COUNTER (INPUT 1 ONLY)

OPTOCOUPLER INPUT

Range: 0 to 65,000 counts

Resolution: 1 count

Input Signal: 0 to 5V

Input Impedance: 470 Ω

Bandwidth: 0 to 25 Hz

FREQUENCY METER (INPUT 1 ONLY)

OPTOCOUPLER INPUT

Range: 20 to 4000 Hz

Time Resolution: 6.5 µs

Input Signal: 0 to 5V

Input Impedance: 470 Ω

GENERAL

A/D SPECIFICATIONS

Noise: 30 µV RMS

Internal Linearity Error: ±0.08% of FSR

Offset Error: 0.1%

OPEN COLLECTOR ALARM

OUTPUT (OUTPUT 8)

Maximum Current Sink:

50 mA @ 5 Vdc (fuse protected)

Input Impedance: 50 Ω

COMMUNICATION

USB 1.1 compliant

SAMPLING

Capacity: 512 KB (512,000 samples total)

Analog Sampling Rate: The number of sensors in use limits the maximum sampling rate:

1. Maximum sampling rate with one sensor is 4000 samples/sec
2. Maximum temperature sampling rate 1 sample/sec
3. Maximum sampling rate with two sensors or more is 1 sample/sec
4. Maximum sampling rate with two PT100 RTD sensors or more is every 10 seconds
5. Maximum sampling rate with five sensors or more and at least one thermistor or thermocouple (J, K or T) is every 10 seconds
6. Maximum sampling rate with seven sensors or more is every 10 seconds
7. Maximum sampling rate with eight PT100 RTD sensors or more is every 10 seconds
8. Data logger displays readings in real time at rates up to 1 sample/sec
9. Data logger software displays online readings at rates up to 1 sample/sec

Analog Sampling Resolution:

16-Bits

MAN/MACHINE INTERFACE

Keyboard: Full keyboard operation—enables manual programming of the data logger

Display: graphic LCD 64 x 128 pixels

POWER SUPPLY

Power: Internal rechargeable 7.2 V Ni-MH battery, built in battery charger, external 9 to 12 Vdc input via included universal 100 to 240 Vac adaptor
Battery Life: 25 hrs between charges

OPERATING TEMPERATURE

Operating Temperature Range: 0 to 50°C (32 to 122°F)

MECHANICAL

Enclosure: ABS plastic

Dimensions:

182 H x 100 W x 28 mm D (7.17 x 3.94 x 1.10")

Weight: 450 g (1.0 lb)

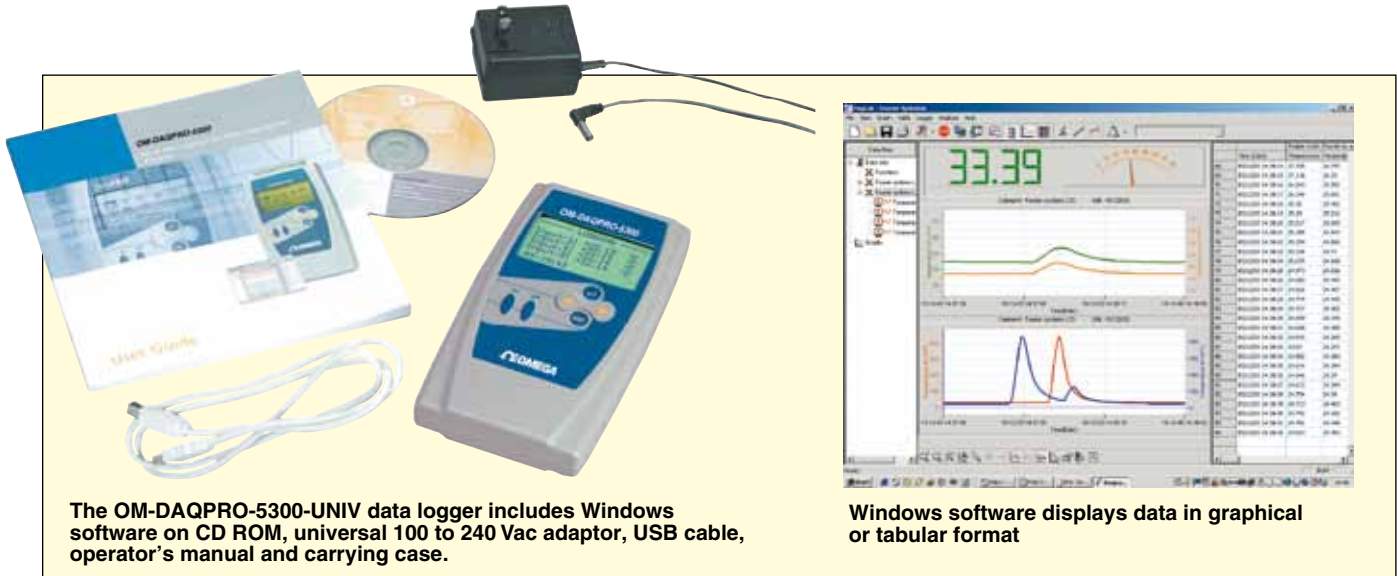
STANDARDS COMPLIANCE

CE, FCC

Thermocouple Table

Thermocouple Type	Range	Accuracy*	Resolution
J	-200 to -50°C (-328 to -58°F) -50 to 50°C (-58 to 122°F) 50 to 1200°C (122 to 2192°F)	±0.5% of reading ±0.5°C ±0.5% of reading	0.1°C (1µV)
K	-250 to -50°C (-418 to -58°F) -50 to 50°C (-58 to 122°F) 50 to 1200°C (122 to 2192°F)	±0.5% of reading ±0.5°C ±0.5% of reading	0.1°C (1µV)
T	-200 to -50°C (-328 to -58°F) -50 to 50°C (-58 to 122°F) 50 to 400°C (122 to 752°F)	±0.5% of reading ±0.5°C ±0.5% of reading	0.1°C (1µV)

* Accuracy does not include cold junction compensation (CJC). CJC error: ±0.5°C



ANALYSIS SOFTWARE

Operating System: Windows XP/ VISTA/7

FEATURES:

- Fast data download
- Data displayed in numeric or graphical form
- Graphical analysis tools such as Zoom and Cursors
- Storage of selected data on disk files
- Hard-copy printing of the collected data
- Direct data export to Excel
- Online retrieval and display of data in real time
- Incorporates data processing functions
- Data logger setup
- Data logger calibration
- Defining new sensors

Maximum No. of Samples vs. No. of Input Channels

No. of Channels	Max. No. of Samples
1	512,000
2	256,000
3	128,000
4	128,000
5	64,000
6	64,000
7	64,000
8	64,000

Ready-Made Insulated Thermocouples with Stripped Leads

MEETS OR EXCEEDS
SPECIAL LIMITS
OF ERROR (SLE)
AND EN 60584-2:
Tolerance Class 1

5TC Series 5 Pack

- ✓ Available from Stock in Convenient 5-Packs
- ✓ PFA PTFE, Kapton or Glass Braid Insulation
- ✓ 20, 24, 30, 36 and 40 AWG Wires
- ✓ 1 and 2 m (40 and 80") Lengths Standard

"TT" PFA
PTFE insulation



"GG" Glass
braid insulation



Custom Lengths,
Insulations and
Configurations
Available

To Order

Model No.	Description
OM-DAQPRO-5300-UNIV	Portable handheld data logger (universal 100 to 240 Vac adaptor)

Accessories

Model No.	Description
OM-DAQPRO-BOX	Weatherproof IP67 enclosure for data logger
OM-DAQPRO-COMCABLE	USB communications cable (spare)
OM-DAQLINK-ADAPTOR-UNIV	Universal 100 to 240 Vac adaptor (spare)
OM-DAQPRO-5300-BATTERY	Rechargeable battery pack (spare)
OM-DAQPRO-5300-CONNECTOR	Input terminal block (spare)

Comes complete with Windows software on CD ROM, universal 100 to 240 Vac adaptor, USB cable, operator's manual and carrying case.

Ordering Example: OM-DAQPRO-5300-UNIV portable handheld data logger and OCW-1, OMEGACARESM extends standard 1-year warranty to a total of 2 years.