Data Acquisition Tools

2286A Data Logging System

Fluke's most powerful stand-alone data logger

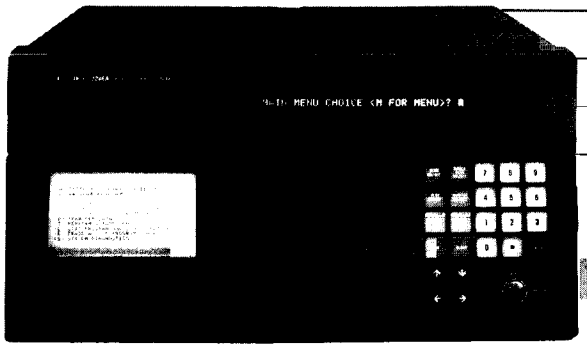
Expandable to 1500 channels*

Precision measurements on a wide variety of input types

3.5" floppy drive, MS-DOS compatible

12V operation for mobile or field use

Pseudo-channels provide computing power without writing software



2286A

2285B Data Logger

Economical solution for simpler applications

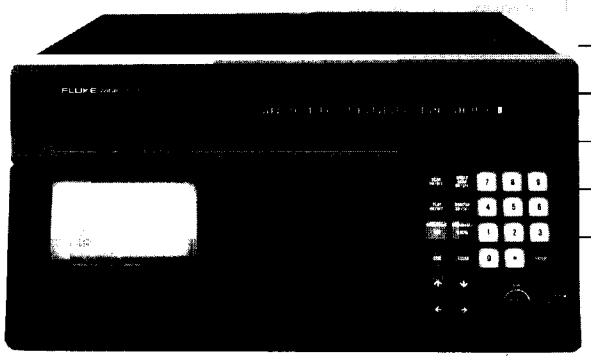
Expandable to 100 channels

Precision measurements on a wide variety of input types

Flexible report generation

12V operation for mobile or field use

Pseudo-channels give computer power without writing programs



2285B

The 2280 Series family of data loggers combines high measurement accuracy, exceptional configuration flexibility, and computer-like power without requiring the user to write software. This family, composed of the 2285B Data Logger and the more powerful 2286A Data Logging System, offers solutions for demanding data acquisition and reporting problems.

The 2286A Data Logging System features an MS-DOS compatible microfloppy drive for data and program storage. The disk can be taken from the 2286A, inserted directly into a PC, and the data files (stored in DIF format) imported into Lotus 1-2-3™, Excel, or other spreadsheets. The 2286A is expandable from a simple 20-channel data logger to a distributed 1500-point data acquisition system.

For applications that do not require all the power or expansion capabilities of the 2286A Data Logging System, the 2285B Data Logger is a more economical solution. Expandable up to 100 channels, the 2285B accepts most 228X I/O options.

The 2280 Series displays collected data, the results of calculations, or outputs can be viewed on its bright, 40-character display, or logged on the wide format 40-column internal printer. Adding further recording flexibility are two communication ports which can be configured with optional RS-232C or IEEE-488 interfaces.

For Demanding Environments

Applications that require more input or output points than can be housed in the mainframe are satisfied by using the 2281A Extender Chassis. Any input or output options housed in an extender chassis have an operating range of −20°C to +70°C.

Another standard feature is full operation from 12V dc power, making the 2280 Series a natural for mobile data acquisition.

Specifications

2280 Series System

Maximum Inputs & Outputs: ≤1500 channels per system (2286A) using 2281A Extender Chassis; ≤100 channels per system (2285B)

Temperature: 0°C to 50°C operating (2286A/ 2285B); −20°C to 70°C operating (2281A)

Distance To Extender Chassis: Any 2281A may be up to 1 km away from a 2286A/2285B

I/O Capacity: Each 2286A, 2285B, or 2281A extender classis provides six slots for input and output options. One of the six slots must contain an A-to-D converter option when one or more analog input options are used. Each analog input option will scan 20 channels and each status or digital input or output option will handle 20 lines.

*Depending on programming requirements.

Data Acquisition Tools

2286A/2285B Data Loggers

Internal 3.5" Disk Drive: MS-DOS compatible disk drive used to store both data and programs. The data can be stored in DIF or ASCII text format. Storage capacity is up to 150,000 channel readings dependent upon disk density, data format and number of channels in a scan group.
Internal Printer: Uses thermosensitive paper, 110 mm (4.4 in) wide. Up to 40 alphanumeric characters per line printed from 5x7 dot matrix, 2.6 lines per cm (6.7 lines per in). Each line printed below the previous line. Will plot one to four graphs from scanned or calculated data, instead of alphanumeric characters, using distinctive symbol for each graph in any of 276 discrete positions across width of paper. Automatic paper take-up reel prevents spilling and allows withdrawal of any printed portion for review.
Power: 100, 120, 220, or 240V ac ±10%, 50 or 60 Hz. Or 10.5 to 15V dc. AC power will trickle-charge 12V battery for uninterrupted power. Less than 120W fully loaded.
Size: 22.23 cm H × 43.94 cm W × 66.17 cm L (9.35 in H × 17.30 in W × 26.05 in L)
Weight: 20-29 kg (45-66 lb) depending on configuration
DC Voltage Accuracy: ±(% of Rdg + Counts)*

Range	90 Days 15°C to 35°C	1 Year 15°C to 35°C	1 Year** −20°C to 70°C
±64 mV	0.005% + 7	0.01% + 8	0.03% + 9
±512 mV	0.005% + 3	0.01% + 4	0.03% + 5
±8V	0.005% + 7	0.01% + 8	0.03% + 9
±64V	0.009% + 3	0.02% + 4	0.05% + 5

*Total instrument accuracy using Option −162 and −176
**A/D Converter must be in 2281A for operation to −20°C or 70°C

Temperature Measurement Accuracy

Thermocouples		Accuracy [1,3]		
Type & Range (°C)	Temperature (°C)	90 Days 15°C to 35°C	1 Year 15°C to 35°C	1 Year[2] −20°C to 70°C
J −200 to 760	−100 to +200 +200 to +760	0.35 0.45	0.4 0.5	0.9 0.76
K −275 to 1350	−100 to +200 +200 to 1350	0.35 0.5	0.4 0.6	1.0 1.25
T −230 to 400	−100 to +200 +200 to +400	0.35 0.45	0.4 0.5	1.0 0.6

Other thermocouple types supported: E, R, N, S, B, C, JDIN, KDIN
[1] Total instrument accuracy. Includes all instrument errors such as A/D errors, scanner errors, power supply warm-up, reference junction errors, conformity errors, etc.
[2] Total instrument accuracy using Option −162 and −175 in 2281A chassis.
[3] A/D Converter must be in 2281A for operation to −20°C or 70°C.

RTD Measurement Accuracy (using −164, −174 options)

RTD Type & Range	Maximum Instrument Error*
100Ω Platinum RTDs	
−200°C to +200°C 200°C to 600°C	0.1°C 0.15°C
10Ω Copper RTDs	
−75°C to +150°C	1.0°C

*Total Instrument Accuracy, 13°C to 33°C for 90 days.

Resistance Measurement Accuracy (using −163, −177 options)

Range	Resolution	±(% of Rdg + Ω)	
		Accuracy	Repeatability
256Ω	2.4 mΩ	0.017% + 5.7 mΩ	0.0065% + 5.7 mΩ
2048Ω	19 mΩ	0.017% ±38 mΩ	0.0060% ±38 mΩ
64 kΩ	0.6Ω	0.06% ±1.22Ω	0.0075% ±1.22Ω

*Total Instrument Accuracy, 15°C to 35°C for 90 days.

Option −211, Math Coprocessor (2286A only)

Functions: Absolute value, square root, exponential, sine, cosine, tangent, arc sine, arc cosine, arc tangent, common logarithm, natural logarithm, e^x, exponentiation, integer part, maximum value, minimum value, standard deviation, elapsed time, group average AND, OR, NOT, EXCLUSIVE OR
Relational Operators: $<$, $\leq$, $>$, $\geq$, $=$, $\neq$
Interpolation Tables: ≤10, user-entered. Number of points per table is limited only by system memory

Option −341, RS-232C Interface

Baud: 110, 300, 600, 1200, 4800, 9600, or 19,200
Parity: Odd, even, or neither
Option −341 includes a Y1707 2-meter cable and a Y1705 null modem cable

Option −342, IEEE-488 Interface

Operates as either a talker only, or talker/listener.
Order Y8021, Y8022, or Y8023 IEEE-488 cables separately
See page 119 for description of PC compatible software.

Ordering Information

Models

2286A* Data Logging System ***$9965***
2285B* Data Logger ***$7098***
2281A** Extender Chassis ***$1080***

* Not functional without 228X I/O modules
** One meter extender cable supplied unless -402/-403 option is ordered.

Included with Instrument

One-year product warranty, line cord, manual set, 3.5" high density disk, 3.5" low density disk, one roll of printer paper, and one pad of programming forms.

Options

-211 Math Coprocessor (2286A) (factory or service center installation only) ***$1490***
-341 RS-232C Interface ***$1100***
-342 IEEE-488 Interface ***$1100***

Accessories

Y2044 24" Rack Mount and Slide Kit ***$235***
Y2045 8¾" Rack Mount Kit ***$180***
Y2046 Thermal Printer Paper (10 pack) ***$70***
Y2047 Extender Chassis Multi-Connector ***$90***
Y8091 3.5" Micro-Floppy Diskettes (10 pack) ***$85***
A22-300 Transit Case for 2280A ***$710***

Manuals

2280 Start-up Guide (P/N 737320) ***$9.50***
2280 User Guide (P/N 753103) ***$150***
2280 System Guide (P/N 753095) ***$132.50***
2280 Series Service (P/N 753111) ***$195***
2281A Operator (P/N 655688) ***$35***
2286/85 User Guide (P/N 870170) ***$135***
2286/85 System Guide (P/N 870175) ***$135***
2286/85 Manual Set* (P/N 870167) ***$250***
*No charge with purchase of unit