

## Portable, flexible solutions for stand-alone or PC-based data acquisition

The Hydra Series offers easy portability along with Fluke's built-in signal conditioning and Universal Input Module at a price to fit your budget. You can easily retrieve data from Fluke Hydra units via the RS-232 interface or through a modem in upload or real-time mode. Channel information and measurement parameters can be set up directly from the front panel or your PC.

Choose from three Fluke Hydra Series models, all featuring removable memory card data storage, internal memory storage, and direct real-time data transfer options. Should power fail, these instruments automatically resume data collection when power is restored.



Hydra Data Bucket

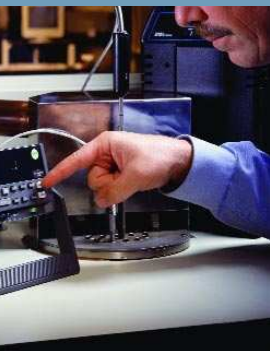
### Key Hydra™ Series features

- Review the min/max and last readings from the front panel
- Channel 0 accepts standard test leads from the front panel for quick measurements
- Monitor a selected channel from the front panel
- Use the Channel function to configure measurement type and range for each individual channel
- Use the Memory Card Drive (in 2635A only) to store data and instrument configuration on a portable, non-volatile memory card and transfer collected data to your PC for later analysis

### 2635A Hydra Data Bucket

The versatile Hydra Data Bucket is the ideal choice for gathering and transporting large volumes of data and for working extended periods from remote locations. It offers:

- **Flexible storage.** The Hydra Data Bucket comes with a 256K PCMCIA card and can be equipped with optional 1 MB, 2 MB, or 4 MB memory cards to suit your data storage needs.
- **Versatile data transfer.** Data may be uploaded from these cards via the Hydra RS-232 port, the optional 263XA-803 memory card drive, or from your computer's standard PCMCIA slot. You can transfer real-time data to a PC at the same time it is recorded to the memory card.
- **Quick setup.** Simply push a few front panel buttons or load instrument setups from the memory card.
- **Fail-safe features.** The Hydra Data Bucket warns of a low battery or low memory condition on the memory card. Its internal memory buffer continues to store up to 70 scans while the card is removed and replaced.



# Hydra™ Series

Choose the Hydra Series that matches your requirements

Model	Universal Signal Conditioning	Nonvolatile Data Storage	Interface
2635A Data Bucket	Yes	PCMCIA Card	RS-232
2625A Data Logger	Yes	Internal	RS-232
2620A Data Acquisition Unit	Yes	None	RS-232
2620A/05 Data Acquisition Unit	Yes	None	IEEE-488

## 2625A Hydra™ Data Logger

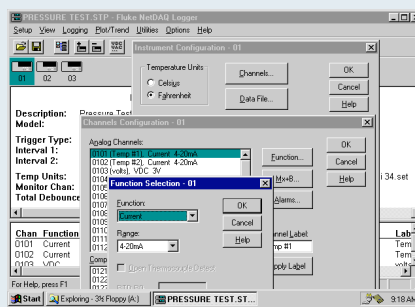
The Hydra 2625A provides a low-cost alternative for standalone monitoring operations with:

- **Built-in nonvolatile memory** that can store more than 2000 scans.
- **Flexible data retrieval** that enables you to upload stored data, or transfer real-time data via modem or directly to your PC via the RS-232 port.

## 2620A Hydra™ Data Acquisition Unit

The Hydra 2620A is ideal for applications that require direct connection to a PC for real-time data collection.

- **Easy-to-use front-end.** An RS-232 serial interface makes it easy to connect the Hydra Data Acquisition Unit to a PC or modem for real-time data acquisition. The 2620A can also be used as a 20-channel panel meter.
- **IEEE interface.** An optional IEEE-488 interface allows you to easily integrate the 2620A with other IEEE-488 instruments and your PC. The 2620A delivers workhorse performance for a wide variety of applications such as test and monitoring systems.



## Menu-driven software simplifies setup

Hydra Logger software provides an intuitive graphical interface that makes it even easier to configure and access the powerful features of your Hydra units without any programming.

## Ordering information

2620A	Hydra Data Acquisition Unit
2620A/05	Hydra Data Acquisition Unit with IEEE-488 interface
2625A	Hydra Data Logger
2635A	Hydra Data Bucket (256 KB memory card)
2635A-1MB	Hydra Data Bucket (1 MB memory card)
2635A-2MB	Hydra Data Bucket (2 MB memory card)
2635A-4MB	Hydra Data Bucket (4 MB memory card)

*Includes: Instrument, Universal Input Module, line cord, user manual, Starter Software (DOS), RS43 cable*

### Options and accessories

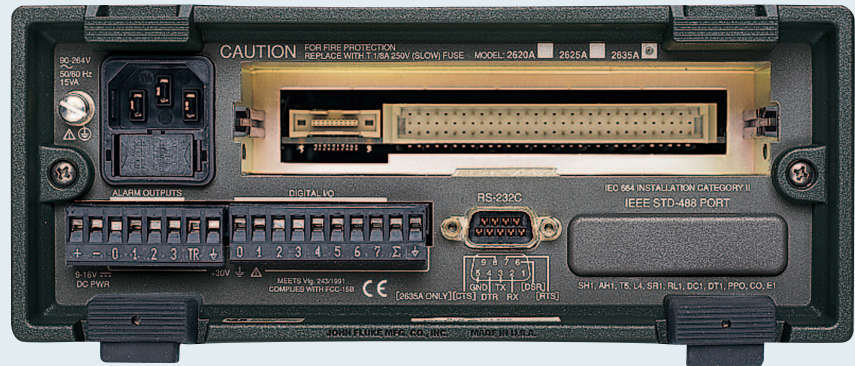
2620A-100	Extra Universal Input Module
263XA-803	External PC Memory Card Drive
263XA-804	Memory Card-256 KB
263XA-805	Memory Card-1 MB
263XA-806	Memory Card-2 MB
263XA-807	Memory Card-4 MB
RS43	RS-232 cable; (DB9 to DB9), Hydra to PC; 1.8m (6 ft)
26XXA-600	Hydra Portable Battery Pack
2620A-101	Current Shunt, 10 Ω, 0.1 % for 0 to 100 mA, Qty (12)
M00-200-634	19" Rack Mount Kit
Y8021	Shielded IEEE-488 Cable, 1 Meter
P/N 889589	Service Manual
C40	Hydra Carrying Case
C44	Transit Case

### Application software\*

2635A-901	Hydra Logger
2635A-902	Hydra Logger with Trending
2600A-904	Trend Link for Fluke

\*IEEE -488 not supported

- **Universal Input Module:** Connect 20 analog inputs of virtually any sensor type without external signal conditioning
- **Hydra Interfacing:** Use RS-232 interface to connect to printer, PC or modem
- **External Trigger:** Activate scanning with real-world events
- **Totalizer:** Count on/off events, updated at every scan
- **Alarm Outputs:** Flag out-of-limit conditions to external devices
- **Power:** Accepts 90-264 V ac, or 9-16 V dc. Can operate from both simultaneously



Hydra Series (Universal Input Module Removed)

## Hydra™ Series

### Channel capacity

Analog inputs: 21  
 Digital I/O and alarm outputs:  
 12 total  
 Totalizer: 1

### Measurement rate

Slow: 4 Rdgs/s nominal  
 Fast: 17 Rdgs/s nominal  
 (1.5 Rdgs/s for V ac, Hz and  $\Omega$  inputs nominal)

### Analog to digital converter

Dual slope type, linear to 17 bits  
 Common mode rejection  
 AC:  $\geq 120$  dB (50/60 Hz,  $\pm 0.1$  %  
 max 1 k $\Omega$  source imbalance); dc:  
 $\geq 120$  dB

### Normal mode rejection

53 dB (60 Hz,  $\pm 0.1$  %)  
 47 dB (50 Hz,  $\pm 0.1$  %)

### Common mode and normal mode voltage maximum

300V dc or V ac rms (channels 0,1,11)  
 150V dc or V ac rms (all other inputs)

### Isolation

Analog input to analog input, and analog input to any digital input: meets IEC 1010 for 300/150 volts reinforced and ANSI/ISA-S82.01-1994 and CSA-C22.2 for 250 volts single insulation

### Current measurements

AC or dc current measurements up to 100 mA may be accomplished using the 2620A-101 10  $\Omega$  Current Shunt Strip

### Totalizing input

DC coupled, non-isolated, max +30V, min -4 V  
 Max count: 65,535  
 Minimum signal: 2 V peak  
 Threshold: 1.4 V  
 Rate: 0-5 kHz (debounce off)  
 Hysteresis: 500 mV  
 Input debouncing: None or 1.66 ms

### Digital inputs

Threshold: 1.4 V  
 Hysteresis: 500 mV  
 Maximum Input: +30 V, min -4 V; non-isolated

### Digital/alarm outputs

The open collector output lines are non-isolated, TTL compatible

### Alarms associations

Alarm outputs 0-3 are fixed assignments associated to channels 0-3. Alarms for channels 4-19 are mapped to digital I/O lines. Digital I/O may be used as a digital input or alarm status output (associated with any input channel or channels).

# Hydra™ Series Specifications

## Hydra™ Series

Input	Range	Resolution	Accuracy (3-Sigma) <sup>1</sup>
DC Volts	90 mV to 150/300 V	1 µV to 10 mV	0.018 %
AC Volts <sup>2</sup>	300 mV to 150/300 V	10 µV to 10 mV	0.13 %
Resistance	300 Ω to 10 MΩ	10 mΩ to 1 KΩ	0.013 %
Frequency	15 Hz to 1 MHz	0.01 Hz to 1 kHz	0.05 %
RTD (Pt100)	-200 to 600 °C	0.02 °C	0.05 °C
<b>Thermocouples</b>			
J	-100 to 760 °C	0.1 °C	0.39 °C
K	-100 to 1372 °C	0.1 °C	0.45 °C
T	-150 to 400 °C	0.1 °C	0.39 °C
<i>Other Thermocouple types R, S, B, C, E, N</i>			

Detailed specifications are available on request.

<sup>1</sup> Total instrument accuracy for 90 days following calibration and ambient temperature range of 18 to 28 °C. Includes A/D errors, linearization conformity, initial calibration error, isothermality errors, reference junction conformity and power line voltage effects within the range from 90 V ac to 264 V ac.

<sup>2</sup> Accuracies for crest factor to 2.0.

## Hydra™ 2635A Memory Card capacity—number of scans

Memory Card Size	Channels in Scan		
	4	10	20
256 KB	8900	4800	2710
1 MB	36860	19860	11210
2 MB	74110	39910	22550
4 MB	149039	80251	45359

### Trigger input

Minimum pulse: 5 µs  
 Maximum latency: 100 ms  
 Repeatability: 1 ms  
 Input "High": 2.0 V min, 7.0 V max  
 Input "Low": -0.6 V min, 0.8 V max  
 non-isolated, contact closure and  
 TTL compatible

### Clock

Accurate to within 1  
 minute/month for  
 0 to 50 °C range

### Power

90 to 264 V ac 50 or 60 Hz (<10  
 watts), or 9 to 16 V dc (<4 watts).  
 (If both sources are applied simul-  
 taneously, the greater of ac or dc  
 is used.) At 120 V ac the equiva-  
 lent dc voltage ~14.5 V.

### Temperature, humidity (non-condensing)

Operating:  
 0 to 28 °C, ≤90 % RH  
 28 to 40 °C, ≤75 % RH

40 to 60 °C, ≤50 % RH  
 Storage: -40 to 75 °C,  
 5 to 95 % RH

### Electromagnetic Interference (EMI)

Passes FCC EMI Class B Equip-  
 ment, VDE 0871B, and CE-  
 EN61010, CE approved

### Safety

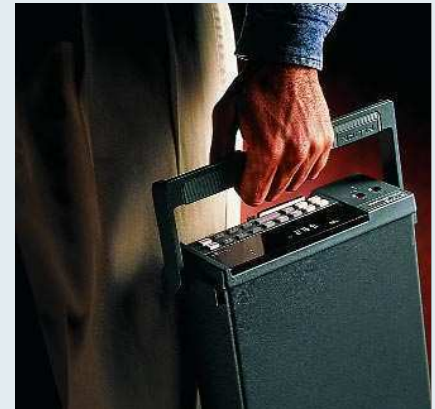
Complies with applicable sections  
 of the IEC1010, ANSI/ISA-S82.01-  
 1994, CSA-C22.2, and CE stan-  
 dards as noted above

### Weight

3.0 kg (6.5 lbs)  
 Dimensions (HxWxD)  
 9.3 cm x 21.6 cm x 31.2 cm  
 (3.67" x 8.50" x 12.28")

### Interfaces

RS-232  
 IEEE-488 (Optional, 2620A only) –  
 Disables RS-232 interface while  
 in use



## Hydra™ 2625A Data Memory

- Stores 2,047 scans

### Scan contents

- Memory life: 5 years minimum;  
 at 25 °C
- Date and time stamp
- All defined analog input  
 channel values
- Status of four alarm outputs and  
 eight digital I/O
- Totalizer count