

Here is a
Hand-Held Data Logger that
Really Performs!



MMS3000-T6V4™

6 Channels of Temperature & 4 Channels of DC Voltage
(Any combination of 6 channels at one time)

MMS3000-T4™

4 Channels of Temperature

ISE, Inc.

10100 Royalton Rd.
Cleveland, OH 44133 USA
Tel: (440) 237-3200 Fax: (440) 237-1744

<http://instserv.com>

Why choose the MMS3000?

Temperature monitoring has long been recognized as one of the most useful tasks performed with portable data acquisition instruments. At the same time temperature monitoring is often viewed to be a basic and unexciting task, only to be performed with instruments that are likewise basic, boring and even outdated. Not any longer...

The **MMS3000** Series of instruments will change the way you approach temperature measurement and recording. With an easy-to-navigate menu system, 4 or 6 temperature input channels, compatibility with the four most common thermocouple types, and a large LCD to easily read current and historical data, the **MMS3000** will become your first choice for temperature measurement and recording.

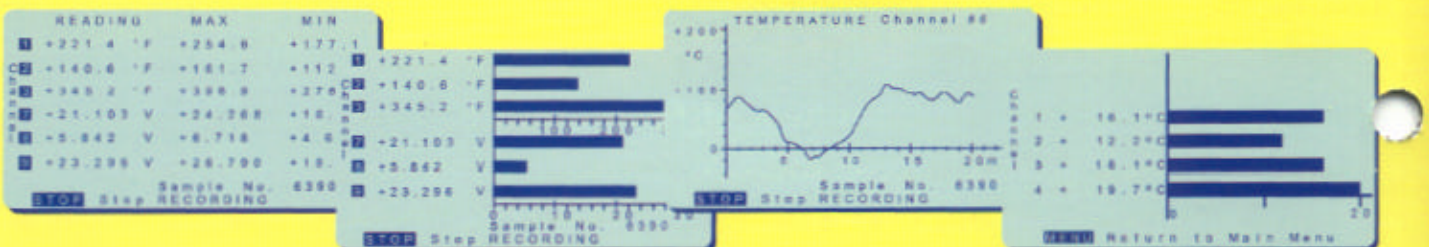
The **MMS3000** allows you to take up to 9,999 samples in a single session, at a maximum interval of 60 hours between samples. The result is a test that can last for weeks without the need to touch anything. All these features are provided at a price that is low even when compared with simple chart recorders. You'll never have to worry about pen and paper refills again.

More Value for Money

There are times when measuring temperature alone can leave you second-guessing about critical conditions in your machinery or facility. Monitoring temperature in combination with a second, third and even a fourth process variable can often reveal so much more than temperature conditions alone. The **MMS3000 Model T6V4** adds this extra capability by providing 2 extra thermocouple channels to be used simultaneously with up to 4 channels of DC voltage measurement, up to 6 channels in any mix can be measured at a time.

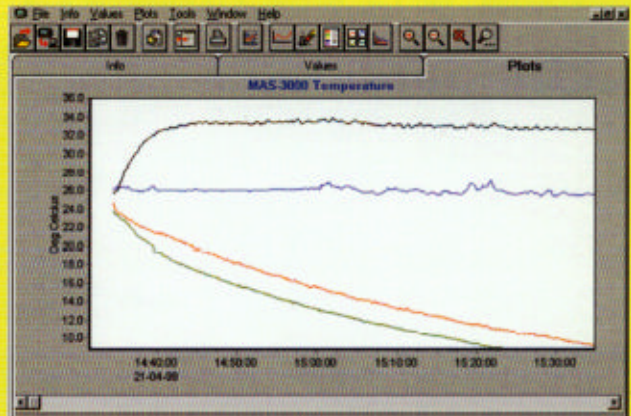
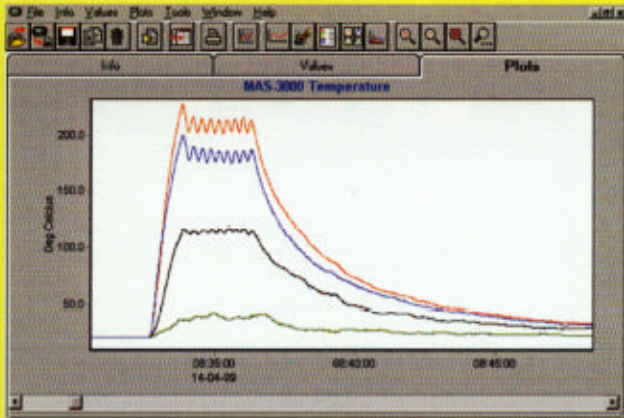
MMS3000 - Significant Features

- ➔ 24 bit A/D converter
- ➔ **PROFLASH™** upgradeable firmware
- ➔ **MRS™** Windows® based software
- ➔ CE compliant
- ➔ 3 YEAR WARRANTY
- ➔ 4.3" x 2.3" (100mm x 60mm) LCD screen
- ➔ Long-life Nicad battery pack
- ➔ RS232 Interface with cable
- ➔ 128 Kilobyte non volatile memory (Approx 100,000 samples)



MAS™ - Windows® Based Software

Once the temperature and voltage data is recorded it then can be easily transferred into your PC for analysis and archiving. To facilitate this, all models of the **MMS3000** come with **MAS** (Measurement Analysis Software). To further assist with in-depth data analysis, information stored in **MAS** is easily exported into popular spreadsheet programs for a greater range of data correlation possibilities. This useful software package is included in the price of each instrument, not an expensive add-on.



Windows® based software for flexible data manipulation.
Producing a variety of graphs & printout options.
Fully functional demonstration copies of MAS available.

Complete Package Includes

1. **MMS3000-T6V4** or **T4** Data Logger
2. **MAS** (Measurement Analysis Software)
3. Owners Operation Manual
4. 120VAC Charger/Power Supply
5. Download Cable
6. Protective Outer Boot



T6V4 Module .

6 channels of temperature and 4 channels of voltage
(any combination up to 6 channels)



T4 Module .

4 channels of temperature

MMS3000-T6V4, T4 Specifications

ITEM	SPEC		REMARKS	
	Model: MMS3000-T6V4 6 Temperature Channels Incorporating 4 Voltage Channels	Model: MMS3000-T4 4 Temperature Channels		
RANGE				
T Type Thermocouple	-418 to +743 °F (-250 to +395 °C)		Operating temperature range is determined by operating range of thermocouple	
E Type Thermocouple	-418 to +1823 °F (-250 to +995 °C)			
J Type Thermocouple	-346 to +2183 °F (-210 to +1195 °C)			
K Type Thermocouple	-418 to +2498 °F (-250 to + 1370 °C)			
Voltage	± 5 VDC and ± 30 VDC (User Selectable)			
Common Mode Range	± 30 VDC (Voltage Channels only)		Differential Inputs (Voltage input ranges for T6V4 only) Voltage allowed between channels & input ground	
RESOLUTION				
Temperature	Above -148 °F (-100 °C): 0.1 °F or °C At or Below -148 °F (-100 °C): 1 °F or °C		Effective resolution will decrease below -148°F (-100°C)	
Voltage	± 5 VDC: 200 µV (.0002 V); ± 30 VDC: 1 mV (.001 V)			
ACCURACY				
Temperature	Above -148°F (-100°C) ± 0.1% of reading ± 0.9°F (0.5°C) At or Below -148°F (-100°C) ± 1.0% of reading ± 0.9°F (0.5°C)		Total measurement accuracy depends on MMS3000-T6V4/T4 and thermocouple accuracy. Only MMS3000-T6V4 accuracy is given here.	
Voltage	± 5 VDC: ± 0.3% of reading ±0.6mV ±30 VDC: ± 0.3% of reading ±3.0mV			
Common Mode Error	0.1% of common mode voltage		MMS3000-T6V4 only. Temperature 73 ± 9°F (23 ± 5°C), charger off. See Appendix 3 of Owners Manual	
MINIMUM SAMPLING INTERVAL				
	# of channels selected (User-selectable)	Voltage Channels Only (Seconds)	Temp or Temp & Voltage (Seconds)	Sampling interval is programmable from 0.2 seconds to 60 hrs. Note: Minimum time to scan all selected channels - not each channel. *T4 Specifications
	1	0.2	0.2*	
	2	0.3	0.3*	
	3	0.4	0.5*	
	4	0.5	0.6*	
	5		0.7	
	6		0.8	
DATA LOGGING				
Data Storage	128 kilobytes – approx. 100,000 individual samples		Non-volatile memory (with battery back-up). # of Samples depends on # of Data Sets and Recordings.	
Data Storage Format	Up to 50 named DATA SETS		User-specified name entered from keypad	
	Up to 50 RECORDINGS per data set		Each recording has unique time/date stamp	
	Up to 9,999 SAMPLES per recording		Each sample contains data for all selected channels	
Data Set Name	Up to 16 alpha-numeric characters			
DISPLAY				
	LCD with graphic capabilities			
Resolution	240 x 128 pixels			
Viewing Area	4.3" x 2.3" (110mm x 60mm)			
Backlight	Electro-luminescent			
PROFLASH				
	Allows internal firmware to be upgraded via built-in RS232 port		Download firmware upgrades via the Internet	

COMMUNICATIONS		
	RS232	15kV ESD Protected. Cable with DB9 connector included
Baud Rate	9600, 19200, 57600 bits per second	Automatic Baud Rate Selection
INPUT TERMINATION		
	Sockets accept miniature thermocouple twin blade plug	Blades spaced 5/16" (7.9mm) center-to-center
INPUT IMPEDANCE		
	Greater than 100k Ohms	Terminal-to-terminal
ISOLATION		
	50VDC minimum	Between temperature inputs and MMS3000-T4 outputs e.g. RS232 port. No isolation between input channels.
BATTERY		
Type	Custom Nickel-Cadmium pack	
Voltage	7.2 Volts nominal	
Capacity	1500 mAh nominal	
Operating Time	13 hrs with backlight off, 7 hrs backlight on - nominal	
CHARGER AND CONDITIONER		
	Built-in dual rate charger – Automatic and Manual control	AC Adapter included (13.5 ± 1.5 VDC, 1A output)
Fast Charge Rate	0.7A nominal	2.5 hours for complete charge nominal
Discharge Rate	0.5A nominal	Combats NiCad battery memory effect
MECHANICAL		
Size	9.7"W x 6.1"L x 3.0"H (247mm x 154mm x 75mm)	Including protective boot
Weight	4.4lb (2kg)	Including protective boot and strap
ENVIRONMENTAL		
Temperature/Humidity		
Operating	32°F to 122°F (0°C to 50°C) / 70% RH	Non-condensing
	32°F to 86°F (0°C to 30°C) / 80% RH	Non-condensing
Storage	14°F to 140°F (-10°C to 60°C) / 95% RH	
EMC	EN50081-1	Radiated and conducted emissions
	EN50082-1	ESD Immunity and RF field immunity (EMI).
The manufacturer reserves the right to modify specifications without prior notice.		

MMS3000-T6V4, T4 Specifications Continued