dataTaker DT5/6xx Series dataloggers
Frequently Asked Questions

Table of Contents

Introduction

Obsolete product notice

Please note: The dataTaker DT500 range is obsolete, having been replaced by the DT80 range. Information in this document may be outdated.

Obsolete models: DT50/51/53/500/505/515/600/605/615, CEM, and PMD.

For more information visit **thermofisher.com/datataker**

Communications & modems

How do I connect my DT5/6xx logger to Ethernet?

You need to use an RS232 to Ethernet adapator such as Lantronix UDS1100.

How do I connect with a USB cable?

Current version DT500 range units are normally supplied with a USB to RS232 Serial Converter, similar and tested units are available from FTDI. Use this with DataTaker DT500 and DT800 products when your PC hasn't got a RS232 serial port available.

Please note: Not all USB converters have been found to work reliably. This unit has been tested by DataTaker.

Can I use a PCMCIA modem with a DT5/6xx logger?

No, the PCMCIA slot is for SRAM memory cards only.

DeLogger5 and Vista

I have Vista on my computer. Can I use DeLogger5 to program my DT500?

No. DeLogger5 only supports DT800 and DT80 range DataTaker data loggers.

Memory cards

Can I use a PCMCIA flash memory or compact flash memory card (with adaptor) with a DT5/6xx logger?

No, the PCMCIA slot is for SRAM memory cards only.

Display

I see funny characters on the LCD display or only a single line is visible. Why?

This can happen if noise effects the communications link to the display. The PMD (panel mount display) is more susceptible to this problem because of the longer cable length. To fix the problem, you can hold down the List and Function Shift keys together. This will re-initialise the display and fix the problem. If you do not have access to the keys, then you can send a command to set 6WARN to any value as it has a side-effect of re-initialising the display.

Thermocouple measurements

How do I use an external temperature reference with a channel expansion module (CEM)?

The DataTaker DT5/6xx models have a built-in temperature sensor that is used as the default cold junction temperature reference for thermocouple measurements. The Channel Expansion Module (CEM) has its own built-in temperature sensor that is used with thermocouple measurements on the CEM. If thermocouple sensors are measured on both the main data logger unit and an attached CEM, then multiple temperature references are required.

An external temperature sensor such as an RTD is used to improve the accuracy of the cold junction temperature compensation. Care must be taken when a CEM is used as the DataTaker automatically determines which temperature reference to use based on the following rules.

1. If NO external temperature reference channel is defined, then the default internal references are used. Any thermocouples measured on the main logger will use the logger's internal temperature sensor as the cold junction temperature reference. Any channels measured on a CEM will use that CEM's internal temperature sensor as the cold junction temperature reference.

2. If an external temperature reference channel is defined (with the TR option), then the temperature reference sensor must be connected to a channel on the same unit (logger or CEM) as the thermocouples it is supplying the cold junction compensation for. For example, when measuring thermocouples on a CEM, then the cold junction temperature sensor must be connected to a channel on the CEM as well. If you attempt to use a reference sensor that is not connected to the same unit, the logger will silently use the default internal temperature reference instead.

Sample speed

How do I sample faster than 1 second?
How do I sample as fast as possible?

If you set the time of a schedule to 0 (zero), the DataTaker will sample as fast as possible. The total speed of sampling will depend on the number of channels being read. The more channels, the slower the schedule speed.

How do I turn off the main noise rejection?

By default, the DT5xx will sample over 1 mains cycle (either 50 or 60 Hz) and return the average value of the channel. This will reject any noise induced in the system cause by the mains frequency. The sample period is set by parameter 11 (P11). Setting P11 to 1000 (P11=1000) will cause the DataTaker to sample for 1/1000 of a second. This will speed up the sampling but will reduce the resolution.

Why is more than one reading with the one time?

The clock in the DT5xx range of DataTakers has a minimum resolution of 1 second. When sampling faster than one second, subsequent readings taken in the same second will have the same time stamp.

DataTaker network

Do I need a ground connection for the DataTaker RS485 network?

Yes, although RS485 is often called a two-wire network, it is a voltage-driven balanced (two-wire) network, which implies that a ground connection is required.

The common mode range of an RS485 network is set in the standard as -7 to +12 VDC. When the DataTakers are powered from the same power supply and have a common ground, the system will work. Once you start powering the DataTakers from remote power supplies, then the chances of exceeding the common mode range increases; different power supplies can have different ground points. This can lead to degradation of the communications reliability and, in extreme cases, damage to the DataTaker.

By connecting the DataTaker ground terminals together we ensure the common mode range is never exceeded. Good wiring practices should be used for all installation wiring. This includes low impedance ground connections between DataTakers connected to any common communications wiring. Appropriate communications cable (twisted pair with shield) should also be used for the RS485 connection.

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