



# IRmadillo Modbus Register Map – Initial Setup

[www.keit.co.uk](http://www.keit.co.uk)

[support@keit.co.uk](mailto:support@keit.co.uk)

## 1. INTRODUCTION

Keit strongly recommends that you set up communications between your IRmadillo and your DCS as soon as the IRmadillo is installed. You can then set alerts so that you will be warned immediately about issues which may affect your IRmadillo’s measurements. This minimises the risk that the samples that you are taking cannot be used to calibrate the IRmadillo. Please contact [support@keit.co.uk](mailto:support@keit.co.uk) if any of the warning conditions are met.

## 2. REGISTERS

Register	Type	Name	Description	Warning conditions
1006	Float32	Probe Temperature	Model numbers ASM0627-xx- <b>Z</b> only: The temperature measured by a sensor near to the tip of the IRmadillo’s ATR probe, in °C. <b>For indication purposes only.</b>	Outside the specifications of your IRmadillo. These vary depending on your model number and can be found on your IRmadillo’s label.  You may find it useful to set limits based on the expected temperature of your process. If the probe temperature is significantly lower than you expect, this may indicate that process flow past the IRmadillo is blocked.
1012	Float32	Internal Humidity	The relative humidity inside the IRmadillo, in %.	Non-zero when the IRmadillo has been purging for more than 24 hours.
1016	U32	Frame Number	The number of frames (spectra) that the IRmadillo has received. This will increment regularly (usually every 120 seconds) and will eventually wrap around to 0.	Has not updated for more than 10 minutes.
1018	U16	Number of Self-Diagnostic Errors	The number of errors that the IRmadillo is detecting.	Non-zero for more than an hour, when the IRmadillo has been running for at least 12 hours.
1020	U16	Number of Self-Diagnostic Warnings	The number of warnings that the IRmadillo is detecting.	Non-zero for more than an hour, when the IRmadillo has been running for at least 12 hours.

6000	Text (ASCII)	Spectrometer ID	The serial number of your IRmadillo.	<p>This should read 'Gxxxx' where xxxx is the serial number, shown on your IRmadillo's label.</p> <p>If the Spectrometer ID reads 'Simulated Sample', then KeitSpec is not connected to your IRmadillo and the spectra that you are receiving are not measurements of your process.</p>
7950	Text (ASCII)	Timestamp (ISO8601)	The UTC time at which your sample was collected, in format yyyy-mm-dd HH:MM:SS	If this has drifted from the current UTC time, ensure that your IRmadillo's controller is able to synchronise with the Windows time server.