

CO2Meter.com Indoor Air Quality Products	Revision:	1.0	Date:	1/21/2010
	ID:	AN104	Type:	Application Note
	Author:	Andrew Robinson		

K-Series UART EEPROM/RAM Access Procedure

Foreword

Please read the MODBUS specification document before reading this document to gain a background understanding on the sensor's implementation of MODBUS and for checksum calculating algorithms.

Using these commands opens up the entire EEPROM and RAM of the sensor for UART access. It will also allow us to access the sensor using the memory locations described in the I2C guide.

Warning: Direct access to EEPROM has the ability to permanently erase your sensor's calibration. Ensure you do not write to non-documented memory locations when implementing.

Direct EEPROM and RAM access via ModBus

Traditionally ModBus operates with a series of defined registers. With the K series of sensors a command has been added that allows for direct access to EEPROM and RAM memory locations. This will allow you to use the memory locations specified in the I2C Com guide, available on CO2Meter.com, to access the sensor, thus taking full advantage of the features offered by the K series of sensors.

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Command Reference

Reading a value

Request:

Description	Address 1byte	Command 1-byte	Address (see I2C guide) 2-bytes		N- Bytes to Read 1-byte	Checksum 2-bytes	
Example (reads CO2)	0xFE	0x46	0x00	0x08	0x02		

Command Bytes: 0x46- EEPROM Read, 0x44 – RAM Read

Response

Description	Address 1byte	Command 1-byte	Count 1-byte	N- Bytes Read n-bytes		Checksum 2-bytes	
Example (cont.)	0xFE	0x46	0x02	0x01	0x90		

Writing a value

Request:

Description	Address 1byte	Command 1-byte	Address (see I2C guide) 2-bytes		Count 1-byte	N- Bytes Read n-bytes	Checksum 2-bytes	
Example (Initiates Data collection on K33 Sensors)	0xFE	0x46	0x00	0x60	0x01	0x35		

Command Bytes: 0x43- EEPROM Write, 0x41 – RAM Write

Response:

Description	Address 1byte	Command 1-byte	Checksum 2-bytes	
Example (cont.)	0xFE	0x46		