Instruction Manual of Laser Ranging Sensor

XKC-KL200-2M-UART

Normal configuration defaults

Laser switch UART parameter configuration table:

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| Configuration item | Defaults | instruction |
| Baud rate | 2=9600bps | 0-9,2400bps-128000bps (see the baud rate configuration table for details) |
| Device address | 0 | 0-65534[FFFE] (65535[FFFF] is the broadcast address) |
| Calibration distance value | 100 | 10-2000 (10-2000mm) |
| Upload mode | 1 | 1=auto upload, 0=manual query |
| Upload interval | 5 | Value range 1-100 (corresponding to 100ms-10s) |
| LED mode | 0=lights up when there is induction | 0=light on when there is induction, 1=off when there is induction, 2=normally off, 3=normally on |
| Relay mode | 0=Start when there is induction | 0=start when there is induction, 1=close when there is induction |
| Line output mode (Communication mode) | 1 or 0 | 0=relay mode, 1=UART mode |

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| Baud rate configuration table： |
| Serial number | Baud rate |
| 0 | 2400 |
| 1 | 4800 |
| 2 | 9600 |
| 3 | 14400 |
| 4 | 19200 |
| 5 | 38400 |
| 6 | 56000 |
| 7 | 57600 |
| 8 | 115200 |
| 9 | 128000 |

The default configuration of the serial port:  
Baud rate: 9600  
Data bits: 8  
Check Digit: None  
Stop bit: 1

DATA FORMAT GENERAL

Data format: Hexadecimal:

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| --- | --- | --- | --- | --- | --- |
|  | Data Format |  |  | | |
|  | 1 | 2 | | 3 | 4 | | 5 | 6 | 7 | 8 | 9 |
|  | Command ( ASCII = B) | Command (ASCII = 2) | | Length \*1 | Address high | | Address Low | Data high | Data Low | Answer | Check (XOR8) |
| Send instructions | 62 | 32 | | 09 | FF | | FF | 00 | 01 | 00 | XOR8 |
| General command ACK | 62 | 32 | | 09 | 00 | | 00 | 00 | 00 | 66 | XOR8 |
|  |  |  | |  |  | |  |  |  |  |  |

\*1 Data length: the entire length from the first byte (inclusive) of the command to the check byte  
(inclusive)

Most EXAMPLE use FF FF as Address is also Possible to send only to one Sensor by use correct address

GENERAL

When in UART than Manuall or Automatic mode on TX Line

When Relay than only switch on TX line

It is not possible to use both Uart and Relay at the same time

ASCII command code:  
b9 Restore factory settings  
b0 configure baud rate  
b1 Read current configuration information  
b2 Configure 485 address  
b3 Read data or upload data automatically  
b4 Configure upload data mode  
b5 Configure the active upload time interval  
b7 Configure LED mode  
b8 Configure the relay mode  
a0 Configure line mode  
a1 Configure response speed

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Restore Factory | 62 | 39 | 09 | FF | FF | FF | FF | FE | XOR8 |
| (Xingkechuan g default) | 62 | 39 | 09 | FF | FF | FF | FF | FD | XOR8 |
| Successfully returned | 62 | 39 | 09 | 00 | 00 | 00 | 00 | 66 | XOR8 |
| The data bit is 0xffff for the factory restoration command,  Parameter Description: FE: Restore the default configuration of Xingkechuang FD: restore user default configuration The above command restores the factory with the address of 0000. If you want to restore the factory with any address, you can change the address to FF, FF, as shown below: 62 39 09 FF FF FF FF FE 62 39 09 FF FF FF FF FD |  |  |  |  |  |  |  |  |  |

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| Change Adress to 00 01 | 62 | 32 | 09 | FF | FF | 00 | 01 | 00 | XOR |
| Successfully returned | 62 | 32 | 09 | 00 | 00 | 00 | 00 | 66 | XOR8 |
| Parameter description: 00 00~FF FE The above command changes the 0x0000 address to 0x0001 |  |  |  |  |  |  |  |  |  |

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| Change Baudrate | 62 | 30 | 09 | FF | FF | 00 | 02 | 00 | XOR |
| Successfully returned | 62 | 30 | 09 | 00 | 00 | 00 | 00 | 66 | XOR8 |
| Parameter Description: 0 = 2400bps 1 = 4800bps 2 = 9600bps 3 = 14400bps 4 = 19200bps 5 = 38400bps 6 = 56000bps 7 = 57600bps 8 = 115200bps 9 = 128000bps The above command changes the baud rate to 9600bps |  |  |  |  |  |  |  |  |  |

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| Upload mode | 62 | 34 | 09 | FF | FF | 00 | 01 | 00 | XOR |
| Successfully returned | 62 | 34 | 09 | 00 | 00 | 00 | 00 | 66 | XOR |
| Parameter Description: 0: Manual query mode 1: Automatic serialization mode The above command changes the upload mode to: (automatic upload mode) |  |  |  |  |  |  |  |  |  |

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| Upload interval 100ms | 62 | 35 | 09 | FF | FF | 00 | 01 | 00 | XOR |
| Upload interval 1s | 62 | 35 | 09 | FF | FF | 00 | 10 | 00 | XOR |
| Upload interval 5s | 62 | 35 | 09 | FF | FF | 00 | 50 | 00 | XOR |
| Successfully returned | 62 | 35 | 09 | 00 | 00 | 00 | 00 | 66 | XOR |
| Parameter description: 1-100 (corresponding to 100ms-10s) |  |  |  |  |  |  |  |  |  |

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| LED Mode | 62 | 37 | 09 | FF | FF | 00 | 01 | 00 | XOR |
| Successfully returned | 62 | 37 | 09 | 00 | 00 | 00 | 00 | 66 | XOR |
| Parameter Description: 0 = lights up when inductive 1 = Turn off when sensing 2 = always off 3 = always on The above command changes the LED mode to: (1 = off when inductive) |  |  |  |  |  |  |  |  |  |

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| Relay Output Mode (only when in Relay Mode) | 62 | 38 | 09 | FF | FF | 00 | 01 | 00 | XOR |
| Successfully returned | 62 | 38 | 09 | 00 | 00 | 00 | 00 | 66 | XOR |
| Parameter Description: 0 = Start when sensed 1 = Turn off when sensing The above command changes the relay mode to: (1 = close when there is induction) |  |  |  |  |  |  |  |  |  |

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| Relay Mode / UART Mode | 61 | 30 | 09 | FF | FF | 00 | 01 | 00 | XOR |
| Successfully returned | 62 | 30 | 09 | 00 | 00 | 00 | 00 | 66 | XOR |
| Parameter Description: 0 = Relay mode 1 = UART mode The above command changes the line mode to: (1 = UART mode) |  |  |  |  |  |  |  |  |  |

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| Reading Config | 62 | 31 | 09 | FF | FF | 00 | 00 | 00 | XOR |

RETURN ! with 28bytes

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| Successfully  returnd | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
|  | command | command | length | Address | Address | Reserve | Reserve | Reserve | Reserve | Reserve | Nocalibration | Baudrate | Device Adress | Device Adress | Calibration Distance High | Calibration Distance Low | Uploadmode | Uploadinterval (hex) | Reserve | Reserve | LEDmode | Relaymode | Relay Output Mode | Reserve | Reserve | Reserve | Reserve | Answe | Check |
|  | 62 | 31 | 1D | 00 | 00 |  |  |  |  |  | FF | 02 | 00 | 00 | 00 | 64 | 01 | 0A |  |  | 00 | 00 | 00 |  |  |  |  | 66 | XOR |

When in Manual Mode

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Request Distance | 62 | 33 | 09 | FF | FF | 00 | 00 | 00 | XOR |
| Successfully returned | 62 | 33 | 09 | 00 | 00 | 00 | 2E | 00 | XOR |
| Example value data  00 E2 = 226mm  02 C3 = 707mm |  |  |  |  |  |  |  |  |  |

Example code for automatic and manual mode

If (Serial.available()>=9)

{byte data[9];

Serial.readBytes(data,9);

If (data[0] == 0x62 && data[1] == 0x33)

{

int length = data[2];

int address = (data [3] << 8) | data[4];

int rawDistance = (data[5]<<8) | data[6];

byte checksum = data[8];

byte calcChecksum = 0;

for (int j=0; j<8; j++)

{ calcChecksum ^=data[j];}

If (calcChecksum == checksum) { distance=rawDistance;}

}

}