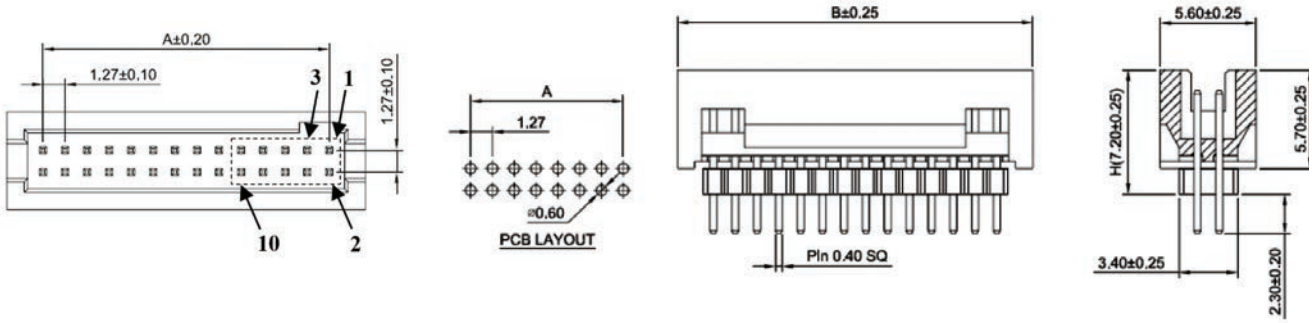
# SM-UART-04L Laser Dust Sensor

## Connector

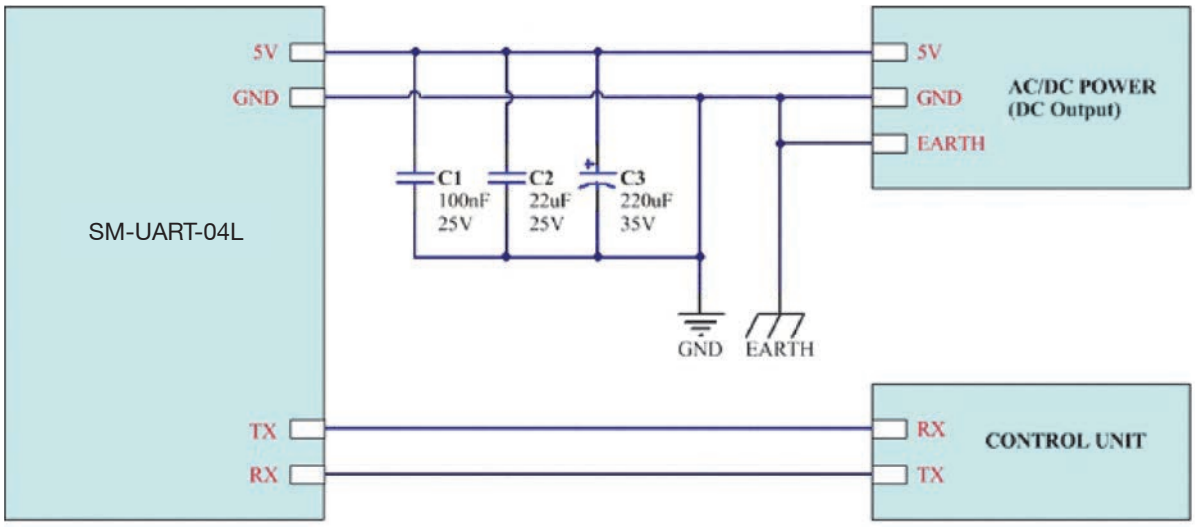
Sensor Connector:
CJT A1276WVA-N-2x5P-H72

Equivalent Connector:
Harwin, Inc. M50-3000545; Amphenol FCI 20021311-00010T4LF

| Pin # | Pin Name | Description |
|---|---|---|
| 1 | 5V | Input Supply Voltage |
| 2 | 5V | Input Supply Voltage |
| 3 | GND | Ground |
| 4 | GND | Ground |
| 5 | RESET | Reset Pin @3.3V TTL, Low level reset |
| 6 | NC | — |
| 7 | RXD | UART Receiver @ 3.3V TTL |
| 8 | NC | — |
| 9 | TXD | UART Transceiver @ 3.3V TTL |
| 10 | SET/SLEEP | Working Mode Pin @ 3.3V TTL Floating or high level for normal working condition. Low level for dormancy mode. |




## Application Circuit




Application circuit

# SM-UART-04L Laser Dust Sensor - Communication Protocol

## UART

| UART Serial Configuration | |
|---|---|
| Baud Rate | 9600 bps |
| Data Bits | 8 |
| Parity | None |
| Stop Bits | 1 |

## Default Output UART Frame Format

| | | |
|---|---|---|
| Head 1 | 0x42 | |
| Head 2 | 0x4D | |
| H_Length | ... | Length = 2 * 13 + 2 (Data+CS) |
| L_Length | ... | |
| H_D1 | ... | PM1 = H_D1 * 256 + L_D1 ug/m3 (Standard Smoke, Calculated Value |
| L_D1 | ... | |
| H_D2 | ... | PM2.5 = H_D2 * 256 + L_D2 ug/m3 (Standard Smoke, Calculated Value) |
| L_D2 | ... | |
| H_D3 | ... | PM10 = H_D3 * 256 + L_D3 ug/m3 (Standard Smoke, Calculated Value) |
| L_D3 | ... | |
| H_D4 | ... | PM1 = H_D4 * 256 + L_D4 ug/m3 (Environment, Calculated Value) |
| L_D4 | ... | |
| H_D5 | ... | PM2.5 = H_D5 * 256 + L_D5 ug/m3 (Environment, Calculated Value) |
| L_D5 | ... | |
| H_D6 | ... | PM10 = H_D6 * 256 + L_D6 ug/m3 (Environment, Calculated Value) |
| L_D6 | ... | |
| H_D7 | ... | |
| L_D7 | ... | |
| H_D8 | ... | |
| L_D8 | ... | |
| H_D9 | ... | |
| L_D9 | ... | |
| H_D10 | ... | |
| L_D10 | ... | |
| H_D11 | ... | |
| L_D11 | ... | |
| H_D12 | ... | |
| L_D12 | ... | |
| H_D13 | ... | Version number |
| L_D13 | ... | Error code 0b0ABCDEFG<br>A = 1 Laser error<br>B = 1 Laser alarm<br>C = 1 High temperature alarm<br>D = 1 Low temperature alarm<br>E = 1 Fan error<br>F = 1 Fan speed compensation start<br>G = 1 Fan speed alarm |
| H_CS | ... | CS = HEAD1 + HEAD2 + … + L_D13 |
| L_CS | ... | |

* We recommend the customers use PM values with the standard smoke.