

RS-PMD-001-01 / 01 Overview

Particulate Sensing Module

Brand: ROGERSENSE

Model: RS-PMD-001-01

Document version: 1.0

Hardware / firmware revision: TBD



Product presentation. Delivered configuration: TBD.

Key functions

Parameter	Value / conditions	Rev.
Targets / range	PM1.0, PM2.5, PM10 / 0-1000 ug/m3 pp.3-5; laser-scattering module	1.0
PM2.5 accuracy	+/-15 ug/m3 at 0-100; +/-15% of reading at 101-1000 ug/m3 p.3; 25+/-2 deg C, 50+/-10% RH, TSI8530 reference, cigarette aerosol, GBT18801-2015	1.0
Supply / active current	4.9-5.5 V DC / <120 mA p.3	1.0

Delivery configuration

Configuration and delivery contents are confirmed in the integration project; no online sample offer.

Application scope

Reference specifications for project evaluation. Final delivery is subject to the agreed hardware, firmware, accessories and acceptance conditions. Presentation imagery does not define manufacturing geometry.

RS-PMD-001-01 / 02 Technical data

Documented values and operating conditions. Conflicting or unavailable values are marked TBD.

Parameter	Value / conditions	Rev.
Targets / range	PM1.0, PM2.5, PM10 / 0-1000 ug/m3 pp.3-5; laser-scattering module	1.0
PM2.5 accuracy	+/-15 ug/m3 at 0-100; +/-15% of reading at 101-1000 ug/m3 p.3; 25+/-2 deg C, 50+/-10% RH, TSI8530 reference, cigarette aerosol, GBT18801-2015	1.0
Supply / active current	4.9-5.5 V DC / <120 mA p.3	1.0
Outputs	UART TTL 3.3 V and PWM 3.3 V p.3	1.0
UART	9600 bit/s; 8-N-1 p.4	1.0
Detection interval / response	1 s / T90 <45 s p.3; different metrics	1.0
Operating environment	-10 to +50 deg C; 0-80% RH, non-condensing p.3	1.0
Dimensions	50 x 32.4 x 21 mm p.3	1.0
Particle size / warm-up	0.3-10 um / 30 s	1.0
Dormancy current	<20 mA	1.0
Storage / mass	-30 to +70 deg C / <38 g	1.0
PM2.5 accuracy conditions	25 +/-2 deg C, 50 +/-10% RH; TSI8530 cigarette aerosol, GB/T18801 reference	1.0

RS-PMD-001-01 / 03 Electrical interface

Pin / terminal definitions

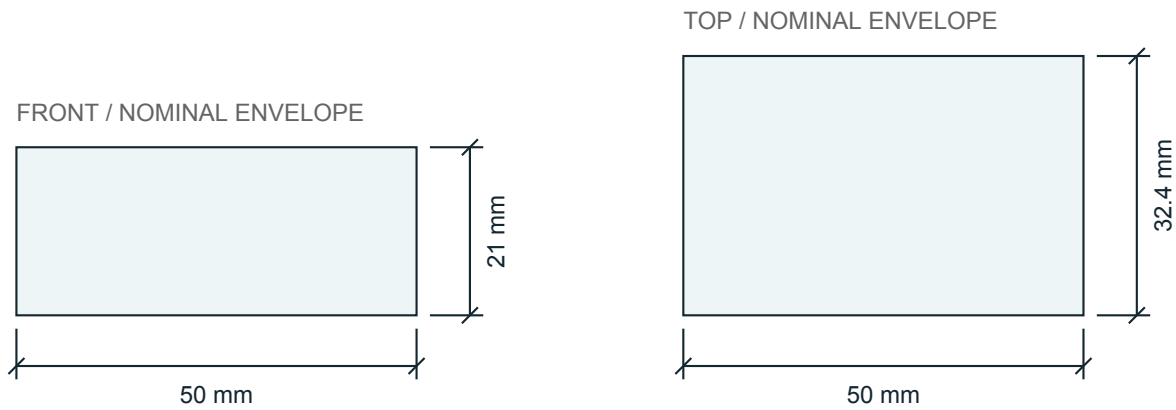
Parameter	Value / conditions	Rev.
1 / 2	VDD +5 V / GND p.4	1.0
4 / 5	RXD / TXD, TTL 3.3 V p.4	1.0
8	PWM output, TTL 3.3 V p.4; remaining pins per original drawing	1.0

Electrical conditions

Item	Value / condition	Rev.
Pin viewing orientation	TBD unless identified in the approved wiring drawing	1.0
Harness / logic compatibility	TBD; confirm against the delivered hardware before wiring	1.0
EMC / isolation / load derating	TBD; component ratings do not establish system ratings	1.0

RS-PMD-001-01 / 04 Mechanical & installation

Dimensions / unit: mm



Unit: mm. Not to scale. Holes / datum / unspecified tolerances: TBD.

Item	Value / condition	Rev.
Length x width x height	50 x 32.4 x 21 mm	1.0
Mass	<38 g	1.0
Inlet / outlet clearances	TBD; keep both unobstructed	1.0
Mounting holes / datum / tolerances	TBD / TBD / TBD	1.0

Installation control

Confirm mounting datum, clearance, connector access and the exact delivered revision. Drawing spans listed in the table require an approved drawing to establish orientation. Unspecified geometry and tolerances: TBD.

RS-PMD-001-01 / 05 Protocol & software

Native interfaces and protocol

Item	Value / condition	Rev.
UART / PWM	9600 bit/s, 8-N-1; UART TTL 3.3 V; PWM 3.3 V	1.0
Automatic output	24-byte frame; header 42 4D, length 00 14	1.0
Automatic checksum	Sum of bytes 1-22; high / low bytes in 23 / 24	1.0
Query request	FF 01 86 00 00 00 00 79	1.0
Query response	9 bytes; FF 86, PM2.5 high/low, PM10 high/low, PM1.0 high/low, checksum	1.0
Checksum boundary	Query command checksum differs from automatic upload checksum	1.0

ROGERSENSE integration services

MQTT connectivity, OTA firmware updates, gateways and cloud platform are available for delivery. Model-specific controllers, interfaces and adaptation are agreed per project. These services do not imply native MQTT or OTA support inside every sensor.

Platform: <https://iot.rogersense.com>

Item	Value / condition	Rev.
Gateway / firmware build	TBD	1.0
MQTT topic / payload / credentials	TBD	1.0
OTA signing / rollback / access control	TBD	1.0

RS-PMD-001-01 / 06 Delivery & verification

Configuration and acceptance record

Item	Value / condition	Rev.
Document version	1.0	1.0
Brand / model	ROGERSENSE / RS-PMD-001-01	1.0
Hardware / firmware revision	TBD	1.0
Serial number / calibration report	TBD	1.0
Approved mechanical drawing	TBD	1.0
Inspection / acceptance report	TBD	1.0
Packing / harness / accessories	TBD; confirm the ordered configuration	1.0
Certification / compliance evidence	TBD unless identified in the delivery agreement	1.0

Open items

Every TBD item and any conflicting supply, accuracy, dimensional or revision requirement must be resolved in the approved delivery configuration. Calibration conditions, wiring orientation, installation datum and application suitability require project verification.

After-sales

After-sales follows the existing ROGERSENSE policy and the approved order. <https://rogersense.com/returns>

RS-PMD-001-01 / 07 Appendix A

UART frame reference

Item	Value / condition	Rev.
Automatic PM1.0	Bytes 11-12, high / low, 1-based numbering	1.0
Automatic PM2.5	Bytes 13-14, high / low, 1-based numbering	1.0
Automatic PM10	Bytes 15-16, high / low, 1-based numbering	1.0
Automatic checksum	Bytes 23-24 = sum of bytes 1-22, high then low	1.0
Sample timing	Detection interval 1 s; T90 <45 s; warm-up 30 s	1.0
Calibration boundary	Published PM2.5 accuracy applies to stated reference aerosol and test conditions	1.0

Reference information from the existing ROGERSENSE specification. Use the approved hardware, firmware, harness and calibration revision; unlisted implementation details remain TBD.