

Air quality monitoring

5014iQ Beta Attenuation Monitor

Automated ambient particulate measurement utilizing beta attenuation

The Thermo Scientific™ 5014iQ Beta Attenuation Monitor helps customers who want to monitor real-time ambient particulate concentrations by utilizing a robust analyzer platform that provides fast and precise results.

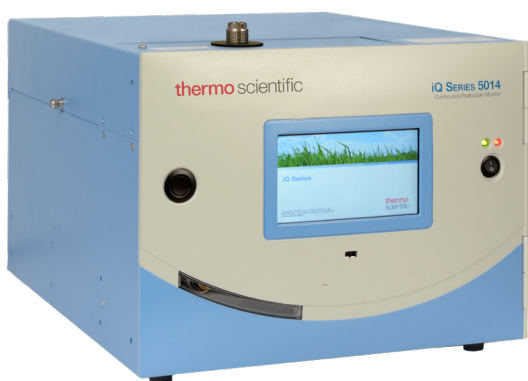
Introduction

The 5014iQ Beta Attenuation Monitor is designed for monitoring PM-2.5, PM-10, PM-1, and TSP in ambient air. The PM samples are collected using a filter tape which automatically advances to a clean spot reducing the requirement for attended operation. The filter tape advance is controlled by user-defined parameters such as mass accumulation limits, flow rates, and advances in a continuous pattern to help mitigate particle loss.

The instrument monitors the sample conditions and adjusts the control system to heat only when necessary, eliminates moisture effects, and ensures that volatile aerosols remain intact for accurate measurement.

This state-of-the-art monitor features:

- U.S. EPA approved PM-10 (EQPM-1102-150) and PM-2.5 (EQPM-0609-183) equivalent monitor
- Continuous measurement
- Low detection limit, high accuracy, and resolution
- Enhanced user interface and ePort communication software
- Enhanced ethernet connectivity
- Long-term unattended operation
- Remote data access



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Specifications	
Source	Carbon-14 (C-14), < 3.7 MBq (< 100 µCi)
Measurement range	0–10,000 µg/m ³
Resolution	0.1 µg/m ³
Precision	±2.0 µg/m ³ , <80 µg/m ³ , 4–5 µg/m ³ > 80 µg/m ³ (24-hour average)
Accuracy (for mass measurement)	± 5% using SI-traceable mass foil set
Air flow rate	1 m ³ /h (16.67 L/min) measured across an internal subsonic orifice, user selectable 14 to 20 lpm
Sample flow precision	±2% of measured value
Sample flow accuracy	< 5% of measured value
Mass concentration	60 to 3,600 seconds and 24-hour
Data output rate	Every 1 second
Operating temperature	The temperature of sampled air may vary -30 to 50 °C. 5014iQ Monitor must be weather protected within range 4° to 40 °C, an optional Complete Outdoor Enclosure provides complete weather protection
Analog I/O (optional)	4 isolated voltage inputs 0–10 V 6 isolated analog voltages outputs, with 4 selectable ranges 6 isolated analog current outputs, with 2 selectable ranges
Digital I/O (optional)	16 digital inputs (TTL) 8 solenoid driver outputs 10 digital reed relay contact outputs Analog inputs (optional)
Serial ports (optional)	1 RS-232/485 port 1 RS-485 external accessory port
Standard ports	3 full-speed USB ports (one in front, two in rear) 1 gigabit ethernet port
Power requirements	100–240 VAC, 50–60 Hz recommended, 500 watts (115 V) 500 watts maximum (220–240 V (instrument, heater & pump)
Physical dimensions	W: 42.5 cm (16.73") x D: 53.8 cm (21.16") x H 31.0 cm (12.2")
Weight	< 55.1 lbs (< 25 kg)
Protocols	MODBUS TCP/IP, Gesytec (Bayern-Hessen), streaming data and NTP (Network Time Protocol) protocols. Simultaneous connections from different locations over Ethernet.
Safety and electrical designations	Designed to meet CE: EN61326:1997 + A1:1998 + A2:2001 + A3:2003, EN61010-1 UL: 61010-1:2004; CSA: C22.2 No. 61010-1:2004; FCC: Part 15 Subpart B, Class B, UKCA
Approvals and certifications	U.S. EPA PM-10 equivalent monitor (EQPM-1102-150) U.S. EPA PM-2.5 equivalent monitor (EQPM-0609-183)

To maintain optimal product performance, you need immediate access to experts worldwide and priority status when your air quality equipment needs repair or replacement. We offer comprehensive, flexible support solutions for all product life cycle phases. Through predictable, fixed-cost pricing, our services help protect the return on investment and total cost of ownership of your Thermo Scientific products.

Your order code:

5014iQ Beta Attenuation Monitor



Ordering information

5014iQ Beta Monitor
Choose from the following configurations options to customize your 5014iQ Monitor
Electrical standards
A = USA, 100–120 VAC 50/60 Hz input
B = Europe, 200–240 VAC 50/60 Hz input
C = Japan, 100 VAC 50/60 Hz input
D = China, 200–240 VAC 50/60 Hz input
Tube options
H = Extended tube assy (6 FT) w/ SS tube union and Teflon™ ferrules
T = Tripod
B = Tripod & extended tube assy (6 FT) w/ SS tube union and Teflon ferrule
N = No extended tube assy
Inlet options
C = TSP w/ bug screen
E = PM-10 US EPA
T = PM-10 traditional
S = SCC inlet combo PM-10 US EPA 1st stage w/ PM-2.5 SCC
U = SCC inlet combo PM-10 traditional 1st stage w/ PM-2.5 SCC
V = VSCC inlet combo PM-10 US EPA 1st stage w/ PM-2.5 VSCC
W = VSCC inlet combo PM-10 traditional 1st stage w/ PM-2.5 VSCC
P = TE inlet combo PM-10 US EPA 1st stage w/TE 2.5C US EPA
Q = TE Inlet combo PM-10 traditional 1st stage w/TE 2.5C US EPA
X* = Thermo Fisher inlet combo PM-10 US EPA 1st stage w/PM-2.5 TF
Y* = Thermo Fisher inlet combo PM-10 traditional 1st stage w/PM-2.5 TF
1 = SCC inlet combo PM-10 US EPA 1st stage w/ PM-1 SCC
2 = SCC inlet combo PM-10 traditional 1st stage w/ PM-1 SCC
3 = PM-10 inlet (EU-Style DPM10/01/00), 1 m ³ /h
4 = PM-2.5 inlet (EU-Style DPM 25/01/00), 1 m ³ /h
N = No inlet
Optional I/O
A = Communications & analog & digital
B = Communications & analog
C = Communications & digital
D = Analog & digital
E = Communications
F = Analog
G = Digital
N = No I/O interface

*X and Y are not US EPA approved and hence recommended for research use only.

Learn more at thermofisher.com/5014iq

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