



Aethalometer AE33

Maintenance and SOPs

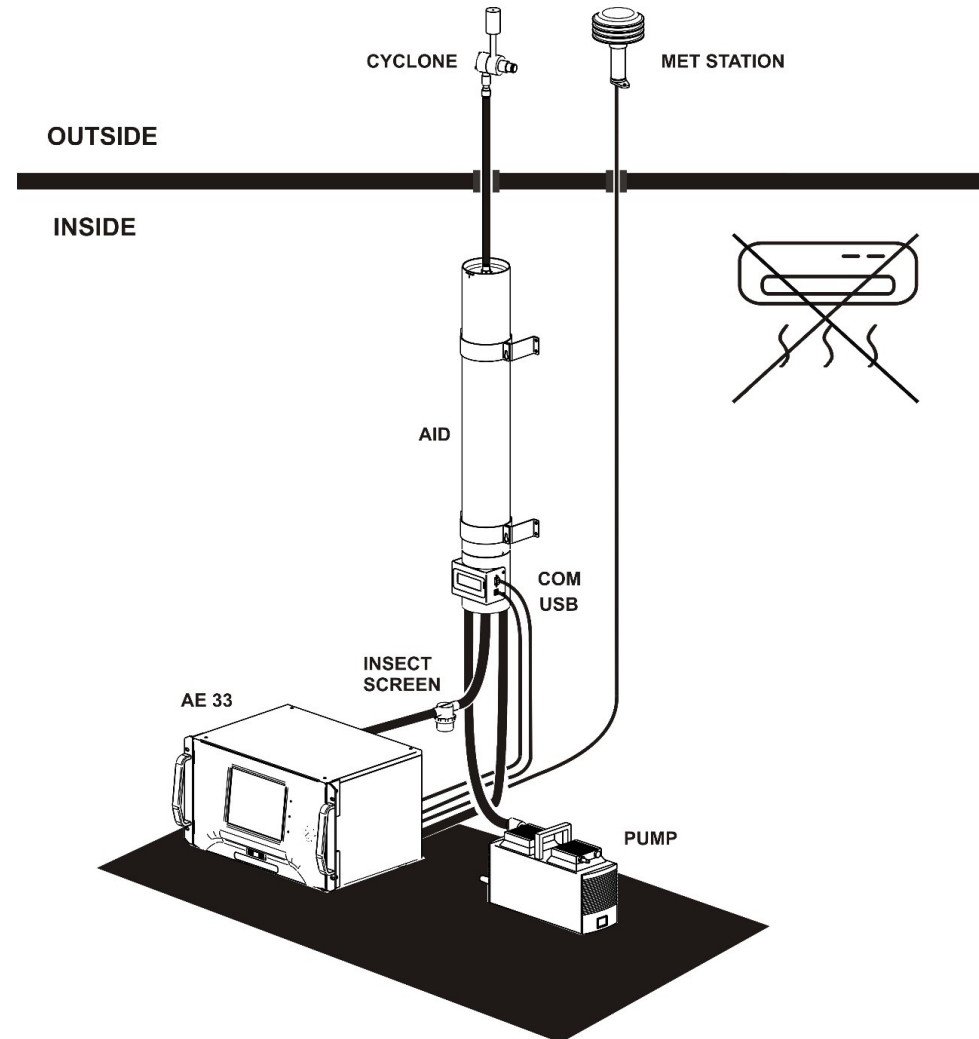
Klemen Kunstelj, PhD

Product Manager

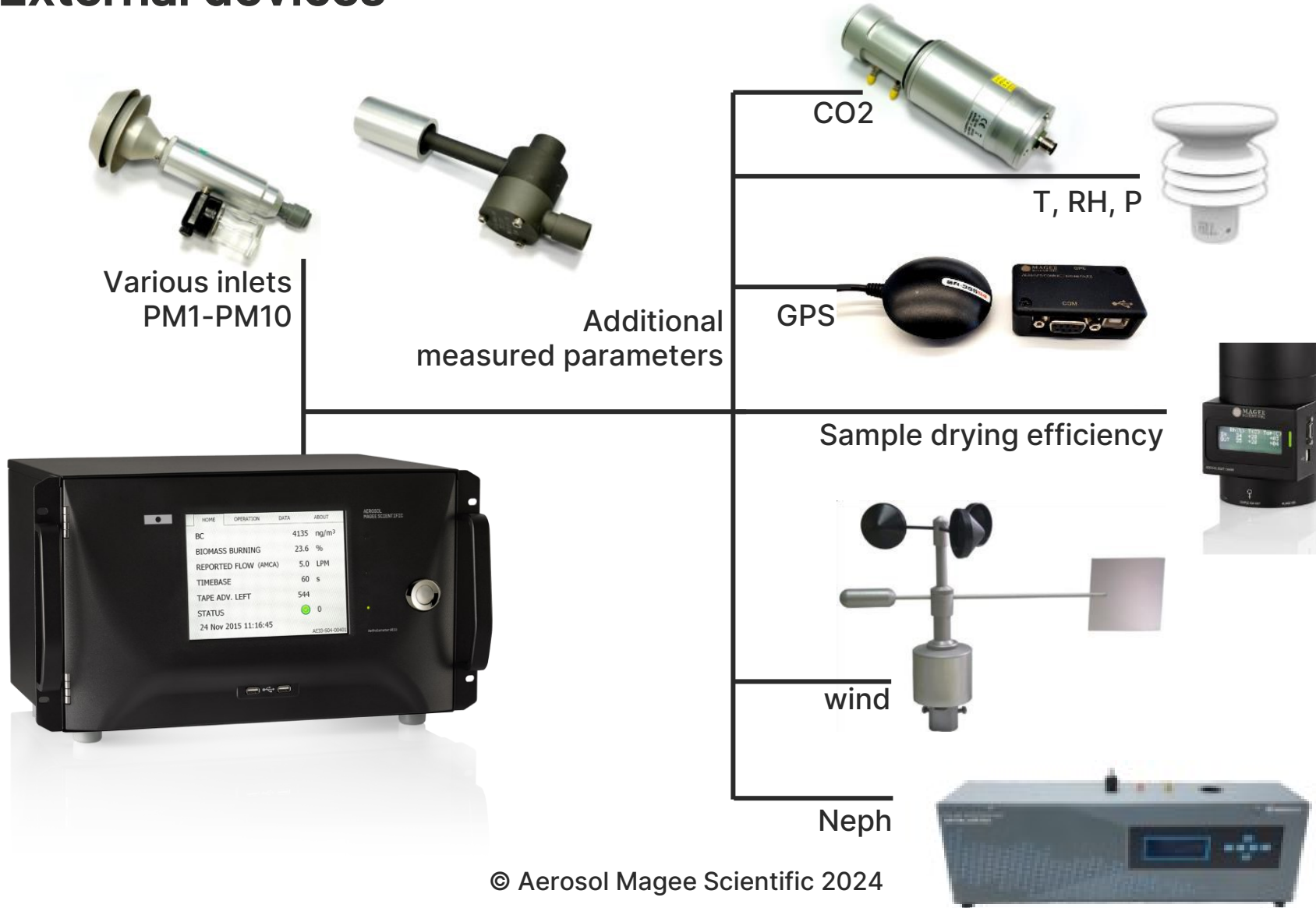


1. Installation

Installation



External devices





2. User Interface and data structure

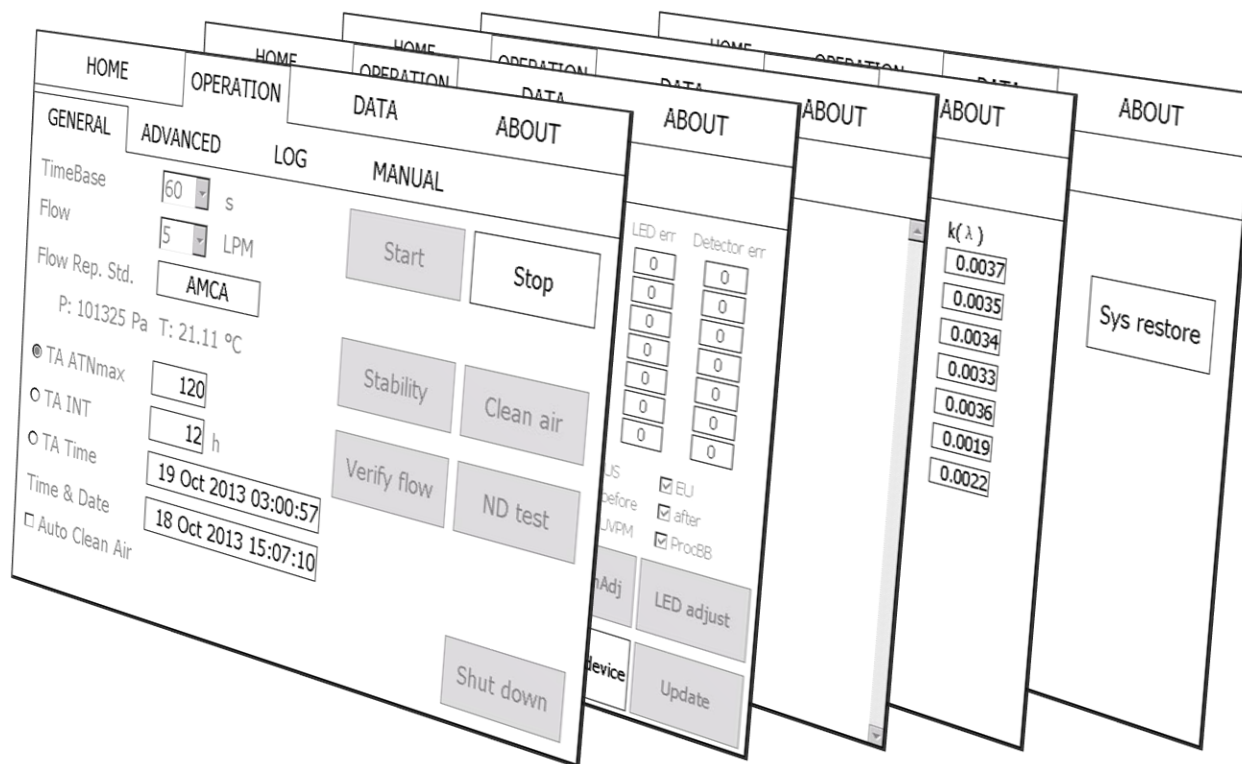
User interface

8.4" color touch-screen with status indicator LED's


Status de-convolution on home screen

live data access on data screen

Access to log records from last start of the instrument.....



User interface / home screen

	HOME	OPERATION	DATA	ABOUT
BC			4536	ng/m ³
BIOMASS BURNING			7.6	%
REPORTED FLOW (AMCA)			5.0	LPM
TIMEBASE			60	s
TAPE ADV. LEFT			152	
STATUS				0
18 Oct 2013 15:07:06				
AE33-S02-00138				

User interface / operation screen

HOME	OPERATION	DATA	ABOUT
GENERAL	ADVANCED	LOG	MANUAL
TimeBase	60 s	Start	Stop
Flow	5 LPM		
Flow Rep. Std.	AMCA		
P:	101325 Pa	T:	21.11 °C
● TA ATNmax	120	Stability	Clean air
○ TA INT	12 h	Verify flow	ND test
○ TA Time	19 Oct 2013 03:00:57		
Time & Date	18 Oct 2013 15:07:53		
<input type="checkbox"/> Auto Clean Air			Shut down

HOME	OPERATION	DATA	ABOUT
GENERAL	ADVANCED	LOG	MANUAL
Status	3	Flow Σ (mlpm)	0
Controller status	0	Flow1 (mlpm)	3461
Detector status	20	Pump (ref.val.)	0
LED status	10	Flow sensor Σ	189
TA status	0	Flow sensor 1	218
Tape sensor left	155	Chamber status	10
Tape sensor right	108	Chamber position	308
TapeAdvance left	156	Valve status	00000
ATNF1	10	Z	0.07
ATNF2	30	C	1.57
Warm up interval (min)	3	Kmax	0.015
Firmware version	513	Kmin	-0.005
Software version	1.0.7.2	Aff	1
IP address	127.0.0.1	Abb	2
Server IP address			
<input type="checkbox"/> AutoConnect			
Serial number	AE33-S02-00138		
		Date format:	<input type="checkbox"/> US <input checked="" type="checkbox"/> EU
		Measure time stamp	<input type="checkbox"/> before <input checked="" type="checkbox"/> after
		Home display	<input type="checkbox"/> UVPM <input checked="" type="checkbox"/> ProcBB
		FlowCal	TapeSenAdj
		LED adjust	
		Change Tape	External device
		Update	

HOME	OPERATION	DATA	ABOUT
GENERAL	ADVANCED	LOG	MANUAL
<pre> 18/Oct/2013 14:57:29 Instrument started. 18/Oct/2013 14:58:01 TapeAdvance procedure started. 18/Oct/2013 14:58:39 Tape Advance number: 40 Number of steps: 641 18/Oct/2013 15:05:00 ATN1zero(1): 16.0097 ATN2zero(1): 18.9057 18/Oct/2013 15:05:00 ATN1zero(2): 22.3271 ATN2zero(2): 27.9712 18/Oct/2013 15:05:00 ATN1zero(3): 21.8199 ATN2zero(3): 24.7816 18/Oct/2013 15:05:00 ATN1zero(4): 20.1721 ATN2zero(4): 25.7866 18/Oct/2013 15:05:00 ATN1zero(5): 12.2301 ATN2zero(5): 18.4499 18/Oct/2013 15:05:00 ATN1zero(6): -10.7622 ATN2zero(6): -4.2041 18/Oct/2013 15:05:00 ATN1zero(7): -6.3861 ATN2zero(7): -1.0904 </pre>			

HOME	OPERATION	DATA	ABOUT
GENERAL	ADVANCED	LOG	MANUAL
<input type="checkbox"/> Set Flow			
Calibrate Chamber	Solenoid 1	ON	OFF
Chamber Tape	Solenoid 2	ON	OFF
Chamber Home	Solenoid 3	ON	OFF
Tape Advance	Ball valve	ON	OFF

User interface / data screen

HOME		OPERATION			DATA		ABOUT
TABLE		EXPORT					
	Ref	Sen 1	Sen 2	BC1	BC2	BC	k(λ)
Ch 1	480850	915921	950089	1768	2314	1768	0.0001
Ch 2	696857	877227	901013	1369	1912	1369	0.0001
Ch 3	682645	885690	903991	1154	2174	1154	0.0001
Ch 4	704607	864144	901588	1287	1946	1287	0.0001
Ch 5	720213	871726	906991	1117	1391	1117	0.0001
Ch 6	642403	860291	905895	552	-181	552	0.0001
Ch 7	688483	860055	904793	2266	3142	2266	0.0001
Sen1 F (mlpm)		3791					
Sen2 F (mlpm)		1492					

HOME		OPERATION			DATA		ABOUT
TABLE		EXPORT					
Free space: 19 year(s) and 24 day(s) left							
<input checked="" type="checkbox"/> Delete Oldest If Full							<input type="button" value="DeleteCFdata"/>
From	01 Jan 2003	To	21 Aug 2018				
							<input type="button" value="Restore settings"/>
<input type="button" value="ExportToUSB"/>		<input type="button" value="Copy DB to USB"/>			<input type="button" value="Basic settings"/>		



3. Maintenance

Procedures

1. Indoor testing and calibration
2. SW update
3. [Filter tape change](#)
4. [Stability & Clean air test](#)
5. [Optical chamber cleaning](#)
6. [ND test](#)
7. [Leakage test](#)
8. [Flow calibration](#)
9. [Flow verification](#)
10. [New cartridge filter](#)
11. [Chamber sliders greasing](#)

Comparison setup in Aerosol company



Service & Maintenance / Instrument status




Normal operation



Warning ; Instrument is still performing measurements, but there is/was an issue, that needs to be checked



Instrument stopped. Immediate response needed.

HOME	OPERATION	DATA	ABOUT
BC		0	ng/m ³
UVPM		0	ng/m ³
REPORTED FLOW (AMCA)		5.0	LPM
TIMEBASE		1	s
TAPE ADV. LEFT		74	
STATUS			1

24 Dec 2013 13:00:44

Maintenance: Standard operating procedures

Procedure	Frequency
Check the sample inlet flow	Once / week Site dependent, use educated judgment!
Inspect and clean the size selective inlet (if present)	Once / week Site dependent, use educated judgment!
Verify time and date (if not set to update automatically)	Once / week
Inspect and clean the insect screen assembly (if present)	Once / month Site dependent, use educated judgment!
Inspect and clean optical chamber	Once / month Site dependent, use educated judgment!
Change by-pass cartridge filter	Once / month (as needed)
Inspect flow divider and ball valve Clean if necessary	Once / 6 months Site dependent, use educated judgment!
Verify flow (flow verification, flow calibration)	Once / 6 months
Clean Air Test	Once / 6 months
Stability Test	Once / 6 months
Inspect the sample line tubing	Once / 6 months
ND filter test	Once / year
Lubricate optical chamber sliders	Once / year



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Thank you for your attention

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