



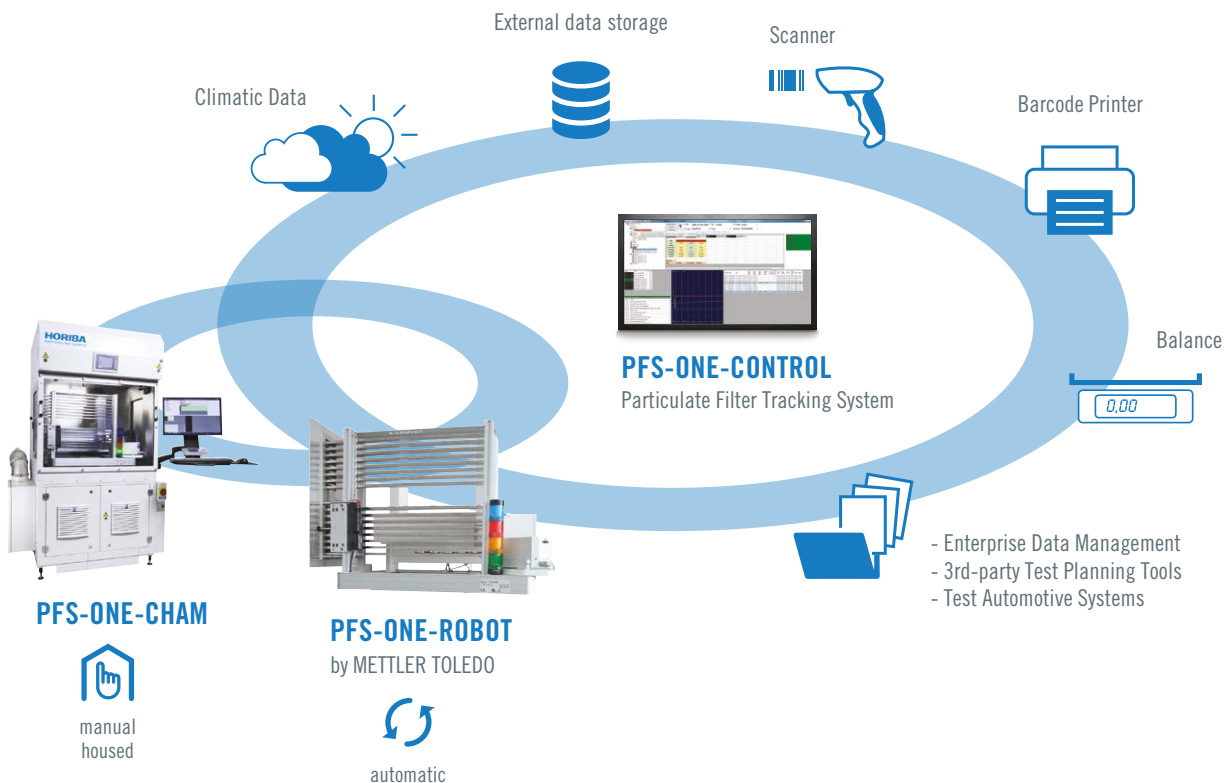
PFS-ONE

Particulate Filter Management System

Several new legislative regulations as well as the demand for more flexibility and accuracy have led to the development of HORIBA's Particulate Weighing Solution - PFS-ONE. The system comprises weighing processes and the entire filter handling complying with up-to-date regulations. PFS-ONE consists of a HORIBA application software running on a standard PC and completes the solution with a METTLER TOLEDO filter robot and a clean work bench by Pure Engineering.

PFS-ONE COMPONENTS, ADDITIONAL HARDWARE AND INTERFACES

The definitions of the device interfaces are stored in separate software modules. Other devices can be integrated without touching the main application. The particulate filter weighing can be perfectly adjusted to customer requirements with METTLER TOLEDO's wide product scope ranging from the stand-alone manual Filter Balance to fully-automated Filter Weighing being integrated as PFS-ONE-robot.



DEFINE YOUR SOLUTION

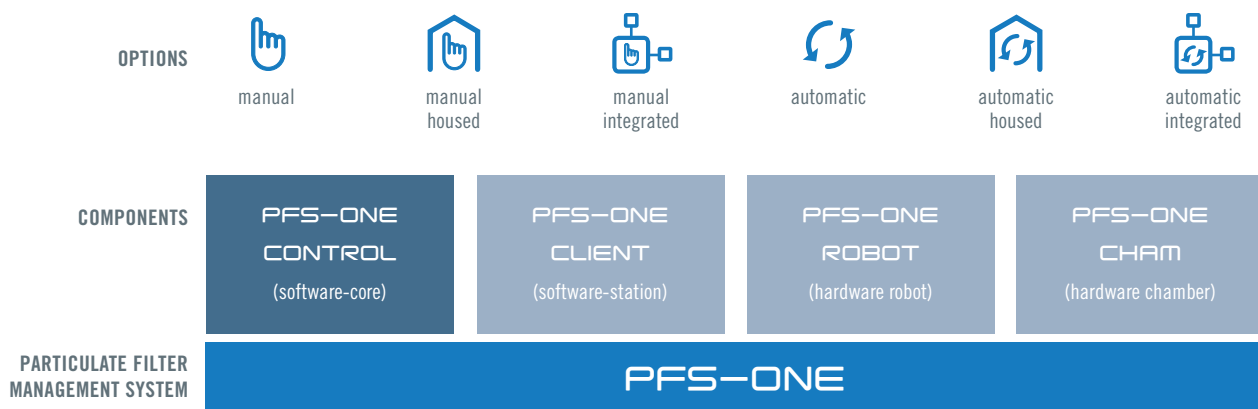
PFS-ONE is designed as a flexible solution which can be tailored to your needs.

PFS-ONE-CONTROL

The basic component PFS-ONE-control can be combined in different ways and also adapted in a running hardware environment for example with an existing balance or clean work bench.

PFS-ONE-CLIENT

PFS-ONE-client as flexible embedded software solution integrates your complete filter workflow inside bigger laboratories and documents the process steps at the test cell.



GET THE HIGHEST ACCURACY

With the combination of PFS-ONE-robot and PFS-ONE-cham the repeatability of filter weighing reaches a maximum of quality. Reference filter weighings show that deviations to previous weighings fall far below any regulation limit. This guarantees reliable weighings of filters with very low loads.

FEATURES

- » Handling of sample, reference filters and check masses
- » Documentation of filter lifecycle, progress, time control and limit violations
- » Upload of results to external storage systems in various file formats
- » Applicable as stand-alone installation or as integrated laboratory module

BENEFITS

- » Compliance with current legislations (emission or environmental)
- » Process profiles adjustable to different applications and use cases (Certification, COP, Environmental, ...)
- » Ready-to-print reports of weighing results and process data
- » Handling of different weighing methods - direct and substitution weighing

PFS-ONE-CHAM PARTICULATE FILTER MANAGEMENT SYSTEM Technical Data Sheet - Weighing Chamber

The screenshot displays the software interface for the weighing chamber. At the top, process parameters are shown: F ID MBU1513473037, T ID HUGO, F Type TX40, F Use SAMPLE, F Pos 1, and P Prof STANDARD. A table titled 'de Wiegung mit metallischem Gewicht' shows data for three samples. A graph shows a weight change over time, and a log lists various actions and events.

ident	use	position	last action	initial [mg]	final [mg]	load [mg]	diff [%]
	SAMPLE	1	Ready	134.8051	133.111	149.854	
	SAMPLE	2	Ready	133.111	141.816		
	SAMPLE	3	Ready	133.111	141.854		
				0.0088375	0.0160276	0.04718543	
				99.99953	99.99792	99.99693	

Time	Action
1:51 PM	Showing Filter MBU1513473037
1:51 PM	Showing Process STD141721774
1:50 PM	ACCEPTED, BUSY, INPO, WEIGHING
1:50 PM	labelled to robot task save element filter.method: F001,ABBA
1:50 PM	check for close
1:50 PM	Showing Filter MBU1513473037
1:48 PM	Confirmed (Master Action)
1:48 PM	process reported STD141721774, HUGO
1:48 PM	master inside is active (Master Action)
1:47 PM	Showing Filter MBU1513473037



TECHNICAL SPECIFICATION

The PFS-ONE particulate weighing management system set a new benchmark for automated filter solutions. This solution is completed with additional components - beside METTLER TOLEDO weighing technologies, we also offer a climate controlled cleanroom work bench from pureengineering for high-sensitive weighing processes.

PFS-ONE-CONTROL

HARDWARE	Standard desktop PC - 2 network cards - Min. 8 GB memory - Quad core CPU or more (Intel i7 or comparable)
	TFT monitor 22"
	Barcode reader and printer (optional)
SOFTWARE	Application software PFS-ONE-control Windows 10 .NET Framework 4.6

PFS-ONE-CHAM

High accurate temperature and humidity controlled system with integrated chiller unit and HEPA filter. PLC / HMI controller with touch panel and network interface for communication and data exchange. Optional with Dew-Point mirror and reverse-osmosis kit for tap water.

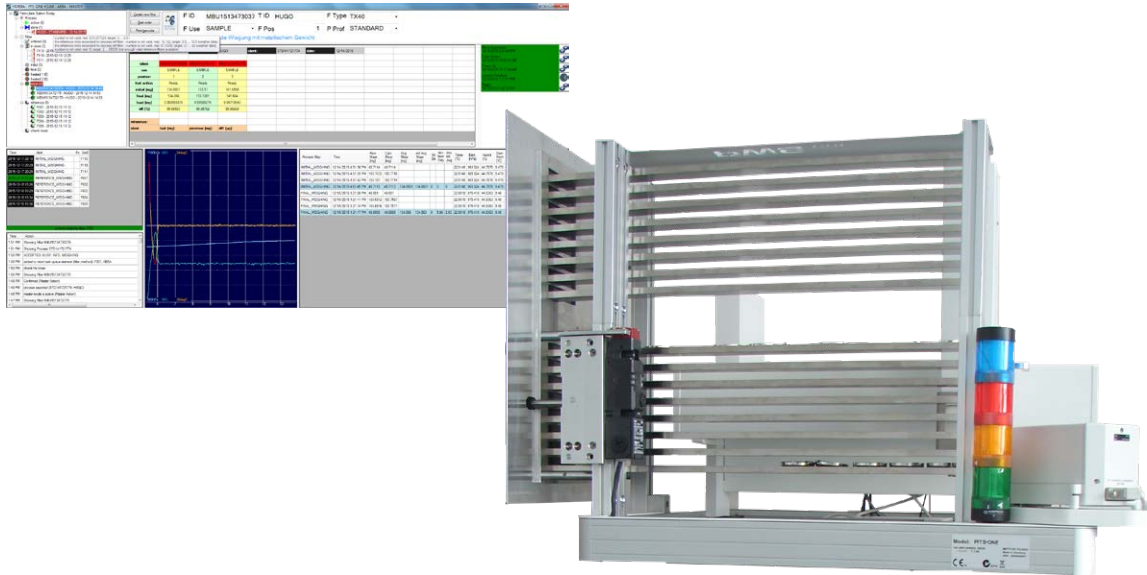
VERSION	Manual with path-through or automated prepared for PFS-ONE-robot Upgradable from manual to automatic
LEGISLATION COMPLIANCE	ECE-R83, ECE-R49, EPA1065, CARB, WLTP
CLEANROOM CLASSIFICATION	ISO 4 (ISO 14644-1), equiv. class 10 (FED STD 209E)
TEMPERATURE CONTROL	22 °C +/- 1 K
HUMIDITY CONTROL	9.5 °C +/- 1 K
INTERFACE	TCP/IP network protocol (climatic data from integrated weather station and health status), USB (for data storage)
BALANCE ISOLATION	Integrated vibration isolated granite
MAX. FOOTPRINT	W 1370 x H 1995 x D 960 (mm)
WORKING DIMENSIONS	W 930 x H 660 x 650 (mm)
POWER SUPPLY	200-240 VAC (L1/N/PE), 50 - 60 Hz max. power consumption 5,5 kW
WEIGHT	approx. 500 kg



PFS-ONE-ROBOT

PARTICULATE FILTER MANAGEMENT SYSTEM

Technical Data Sheet - Robot



TECHNICAL SPECIFICATION

The PFS-ONE particulate weighing systems set a new benchmark for automated filter solutions. Based on world-renowned METTLER TOLEDO weighing technology and HORIBA's vast knowledge of automotive emission measurement, the systems stand for high precision and compliance of particulate emission standards.

PFS-ONE-CONTROL

HARDWARE	Standard desktop PC
	- 2 network cards
	- min. 8 GB memory
	- Quad core CPU or more (Intel i7 or comparable)
	TFT monitor 22"
	Weather station
	- Temperature
	- Barometric pressure
	- Humidity
	Barcode reader and printer (optionally)
SOFTWARE	Application software PFS-ONE-control
	Windows 10
	.NET Framework 4.6

PFS-ONE-ROBOT

FILTER DIAMETER STANDARD	47 mm
REFERENCE FILTER POSITION	User-defined
FOOTPRINT	≤ W 780 x H 680 x D 650 (mm)
THROUGHPUT	Up to 900 weighings a day
FILTER HOLDER INCLUDED	153 pieces
EXTERNAL CALIBRATION WEIGHT	50, 100 or 200 mg
TECHNOLOGY	XYZ rack with stepper motor
POWER	100-230 V / 50-60 Hz

BALANCE

BALANCE READABILITY	0.1 µg
REPEATABILITY WITH FILTER (SD)*	0.25 µg
REPEATABILITY WITH FILTER TYPICAL (SD)*	0.15 µg
REPEATABILITY STAINLESS STEEL TEST WEIGHT	≤ 0.2 µg
BUILT-IN BALANCE ADJUSTMENT	Automatic
MAXIMUM LOAD	2.1 g
ELECTRICAL WEIGHING RANGE	0 - 2.1 g
LINEARITY	1 µg
MISCELLANEOUS	Ultra-micro filter balance Anti-static kit

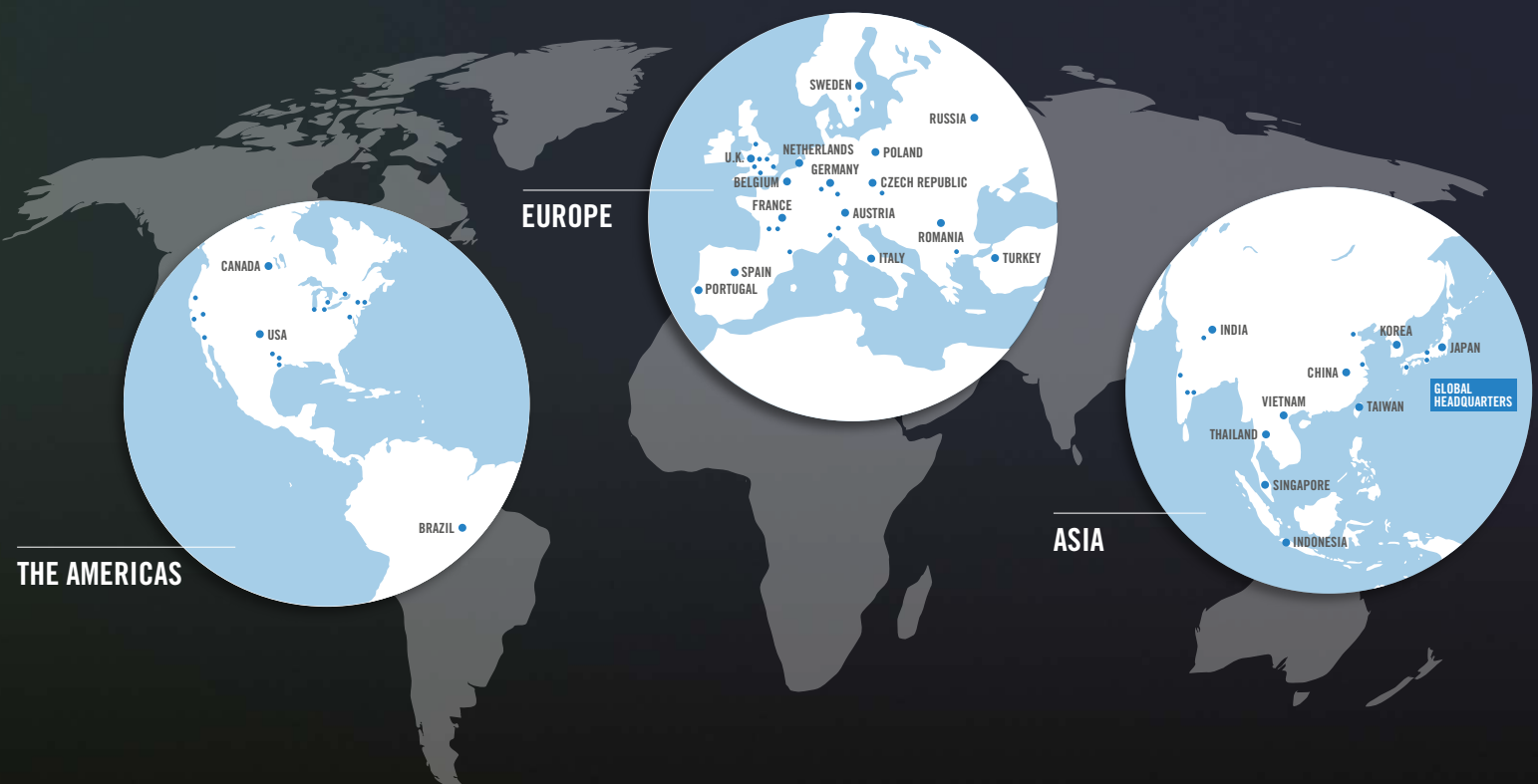
*sd = standard deviation, with conductive filter media such as Pall TX40 without ionizer.

THE HORIBA GLOBAL NETWORK

HORIBA LTD.
 2 Miyano Higashi
 Kisshoin Minami-ku
 Kyoto, Japan
 info@horiba.co.jp

EUROPE
 HORIBA Europe GmbH
 Hans-Mess-Straße 6
 61440 Oberursel
 Germany
 info@horiba.de

THE AMERICAS
 HORIBA Instruments Inc.
 5900 Hines Drive
 Ann Arbor, MI 48108
 USA
 sales-ats.us@horiba.com



THE AMERICAS

EUROPE

ASIA



(1) HORIBA continues contributing to the preservation of the global environment through analysis and measuring technology. (2) The contents of this brochure are subject to change without prior notice, and without any subsequent liability to this company. It is strictly forbidden to copy the content of this brochure in part or in full. All brand names, product names and service names in this brochure are trademarks or registered trademarks of their respective companies. (3) HORIBA PFS-ONE Particulate Filter Management System 2018-05

WWW.HORIBA.COM