ENVIRONMENTAL ANALYSERS

Empowering environmental analysis

Expertise
Passion
Automation

SMC solutions for environmental analysers

Flow controller
- For adjusting the flow of the system.

Pressure sensor
- Monitoring pressure of the system
- Air, general fluid.

2-port valves
- Wide options of size and materials
- Improved weather resistance.

Regulators
- For control of carrier gas.

Fluoropolymer tube
- Suitable for chemical environment.

Digital flow switch
- Monitor the flow of the system
- Dry air, N2, Ar, CO2.

Pinch valves
- Liquid control
- No risk for contaminant in fluid.

Chemical isolation valves
- Zero dead volume
- Low power consumption.

2 Port Valves
- Wide options of size and materials
- Improved weather resistance.

Growing global concern for the environment has made environmental analysis an essential component for protecting public health, complying with increasingly stringent regulations, and maintaining the sustainability of ecosystems. Environmental analysers-whether for air, gases, water or liquids-require an extremely high level of accuracy, reliability and resistance to demanding conditions. In this context, SMC positions itself as a strategic partner with customised automation solutions that optimise the performance and durability of this critical equipment.

With a presence in over 80 countries, more than 700,000 products in its catalogue, and decades of experience in fluid control, SMC offers a range of components specifically designed to meet the needs of environmental analyser manufacturers. From proportional flow control valves to compact pressure sensors and chemically-resistant tubing, our solutions ensure stable, repeatable and contamination-free measurements.

Why choose SMC for your environmental analyser?

1 Continuous innovation and wide product range

SMC is constantly investing in R&D, offering more than 700,000 products with the latest technologies in automation, microfluidics, thermal control, and high purity fluid handling. This allows manufacturers to access an extensive portfolio from a single source, simplifying their supply chain and enabling them to incorporate the most advanced solutions.

2 Quality, reliability and proven durability

Component quality is central to SMC's DNA. Products are designed to deliver accurate and reliable performance under demanding conditions, resulting in analysers with longer life, reduced maintenance requirements and a reputation for robustness in the marketplace.

3 Customised solutions and expert global support

SMC not only offers standard components; our approach also includes “custom design” and “total solution”. We have 5 global technical centres and 1,700 development engineers and sales staff dedicated to solving each customer’s unique challenges. Our global sales and service network covers over 80 countries in approx. 500 locations, ensuring local support and accessible expertise wherever manufacturers operate.

4 Commitment to business continuity planning (BCP)

SMC has implemented a robust Business Continuity Plan (BCP) that encompasses finance, information security, sales, production, and engineering. This assures manufacturers that SMC is prepared for emergencies, ensuring accountability in product supply and maintaining customer confidence. With a solid financial base, secure data centres, and an extensive sales and production network (including 38 global production sites), SMC can flexibly respond to changes in the manufacturing environment and ensure order fulfilment.

BCP Formulated

SMC is dedicated to empowering environmental analyser manufacturers by providing automation and fluid control components that make the difference in accuracy, reliability and efficiency. Our vast experience, combined with a comprehensive product portfolio and an unwavering commitment to quality and customer support, makes us the ideal partner to meet the current and future challenges of environmental analysis.

Air and gas analysers

SMC solutions and benefits

Regulators

SMC regulators are easy to adjust and have a clean design, ideal for gases such as N_2, Ar, CO_2. Our regulators ensure a stable supply pressure for calibration gases, resulting in a more accurate and reliable analyser calibration.

Proportional flow control valves

These valves allow flow control according to the flow rate. This gives manufacturers the ability to implement high precision dilution or mixing systems for calibration gases, improving the versatility and accuracy of their equipment. The choice of body material (stainless steel, brass) makes it possible to accommodate different gases. Indicated as 'Suitable for PM Detection Monitors', its ability to precisely control large flows allows manufacturers to optimise collection efficiency and PM measurement accuracy.

Digital flow switches and sensors

Offering a wide measuring range, these devices are IO-Link compatible, have a fast response time (5 ms or less), and are grease-free. They allow continuous monitoring and verification of the calibration gas flow, alerting any deviation and ensuring the validity of each calibration cycle. They are suitable for dry air, N_2, Ar, CO_2.

Chemical isolation valves

With their low particle generation, oil and metal-free parts, and isolated (diaphragm) structure, these valves minimise sample contamination, ensuring the integrity of analytical results. Their energy-saving circuit option reduces overall analyser consumption.

2-port solenoid valves

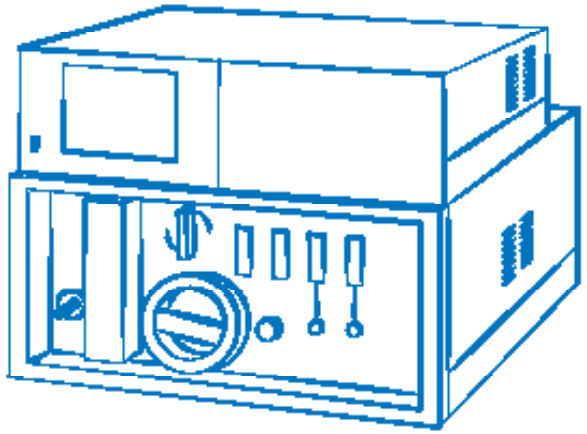
The availability of body materials such as PPS or stainless steel offers manufacturers flexibility in selecting the optimum chemical compatibility for various sample gases, preventing corrosion and adsorption.

Fluoropolymer tubing

The fluoropolymer inner layer of this tubing provides excellent chemical resistance and low adsorption properties, crucial for maintaining the purity of the sample gas from the point of collection to the sensor. The flexibility of the outer polyurethane layer facilitates installation in confined spaces.

Remote pressure sensor

Its compact design saves space and IO-Link compatibility facilitates digital integration. It allows manufacturers to incorporate reliable pressure monitoring for air and general fluids within the analyser.



High purity valves

Designed with chemically-resistant materials such as PFA and stainless steel, these valves ensure compatibility with aggressive gases and solvents. Their diaphragm structure minimises particle generation and prevents contamination, making them ideal for maintaining sample integrity in high-purity gas analysis.

Resin manifold

Compact and customisable, the resin manifold (PEEK/PFA) offers a lightweight and corrosion-resistant solution for distributing calibration or sample gases. Its modular design simplifies integration and reduces potential leak points, enhancing system reliability.

Membrane air dryer

This compact, power-free dryer achieves low dew points (down to -60 °C) without generating heat or vibration. It ensures a dry air supply for sensitive analytical instruments, improving measurement stability and preventing condensation-related errors.

Air combination unit

Modular unit combining filtration, regulation, and lubrication in a single, tool-free assembly. Its clean design and enhanced environmental resistance ensure stable air quality and pressure control, critical for consistent analyser performance.

Fittings

SMC fittings ensure secure, leak-free connections for air and gas lines. Their chemical resistance, sealing performance, and easy installation make them ideal for maintaining system integrity and reducing downtime in demanding analytical environments.

Thermo control unit

SMC offer precise temperature regulation for sample gas conditioning. With low noise, compact design, and CO_2 refrigerant options, these units support energy-efficient and environmentally-friendly thermal management.

Where you can use:

Sample gas

Calibration gas

PVQ Series +

Compact proportional solenoid valve

- Orifice from 0.3 mm for air and inert gas
- Flow control according to the current
- Choice of body material: stainless steel, brass.

JSP Series +

Proportional control valve

- Large flow: up to 300 l/min for air, 3 l/min for water
- Flow control according to the current
- Choice of body material: stainless steel, brass
- Suitable for PM detection monitors.

SRH Series +

Clean regulator

- Contamination-controlled SUS steel
- Air, N_2, Ar, CO_2
- Oil-free.

LVM Series +

2/3-port solenoid valve for chemical liquids

- Low particle generation
- Oil-free / metal-free
- Isolated structure (diaphragm)
- Available with power saving circuit.

PFMV Series +

Flow sensor and monitor

- Flow rate range: min. 0.0 to 0.1, max. -3.0 to 3.0 l/min
- Response speed: 5 ms or less
- Grease-free
- 3-screen digital flow monitor available.

AR Series +

Regulator

- Easy to adjust
- Clean design with urban white colour
- Handle lock option available.

VDW Series +

Compact direct operated 2-port solenoid valve

- For air, medium vacuum, water
- Body material: aluminium, PPS, brass, SUS steel
- Low noise construction.

PSE Series +

Remote type pressure sensor

- Space saving for your device
- IO-Link compatible
- For air and general fluid.

TUL Series +

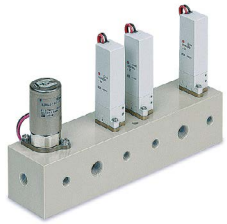
2-layer fluoropolymer polyurethane tubing

- Flexible 2-layer tube
- Outer layer: polyurethane; inner layer: fluoropolymer
- Available in black, white, blue, and translucent.

PF2M Series +

2-colour display digital flow switch

- Wide range of flow measurement (flow ratio 100:1)
- Dry air, N_2, Ar, CO_2
- Grease-free
- IO-Link compatible.



+

Resin manifold

- For chemical fluids (PEEK/PFA)
- Compact design
- Custom design available.

AC-D Series +

Air combination unit

- Modular design with uniform body style
- Better visibility & environmental resistance
- No tools required.

LVA Series +

High purity chemical valve

- Body materials: new PFA/Stainless steel/PPS
- Diaphragm materials: PTFE, EPR, or NBR can be selected
- Organic solvents compatible.

KQ Series +

Fitting

- Body types: total of 51 models
- Selectable surface treatments.

LQ Series +

Fluoropolymer fittings

- Material: new PFA
- Triple-seal or quadruple-seal construction.

IDG-A Series +

Membrane air dryer

- Power supply not required
- Compatible with low dew points (-60 ºC)
- No vibration or heat discharge.

HRSC Series +

Non F-Gas (CO2 refrigerant), standard type circulating fluid temperature controller

- Air transport possible
- CO2 refrigerant (GWP=1) requires no import or usage quotas under the F-Gas Regulation
- Worldwide service location.

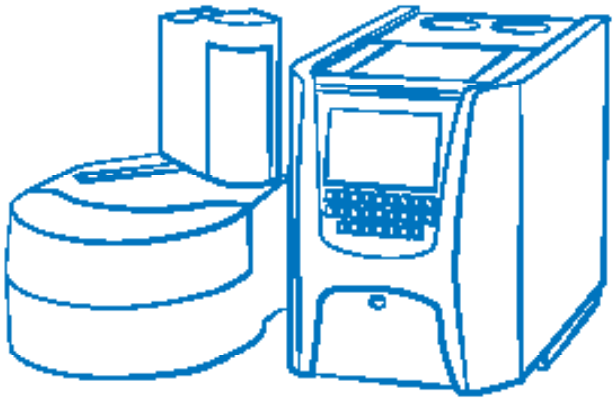
HEF Series +

Peltier-type chiller thermo-con/ compact type

- Low noise design, as low as 37 dBA
- Set temperature range: 10 to 60 °C
- Temperature stability: ±0.1 °C.

Water and liquid analysers

Water and liquid analysers are used to measure parameters such as TOC, NH3, silica, total nitrogen, total phosphorus, and COD. These systems handle samples that may be corrosive or contain particulates, as well as aggressive chemical reagents. SMC provides components with features such as high corrosion resistance to ensure reliable operation, even in adverse sampling conditions.



SMC solutions and benefits

Chemical isolation valves

These valves are oil/metal-free, have low particle generation, and an insulated structure, making them equally beneficial here, preventing cross contamination between sample and reagents.

Pinch valves

By isolating the fluid inside the tube, these valves (available in 2-port and 3-port) eliminate the risk of fluid contamination due to contact with metal valve parts and are highly resistant to contamination. Easy tube replacement simplifies maintenance for the end user, a competitive advantage for the analyser manufacturer.

Fluoropolymer tubing

The inner fluoropolymer layer is essential for transporting liquid samples and aggressive reagents, minimising leaching and adhesion, and ensuring accurate measurements.

2-port solenoid valves

With PPS or stainless steel body options, these valves are suitable for controlling water and other liquids in sample and drain lines, offering durability.

2-port JSX compact valves

The environmental resistance of these valves, with a stainless steel coil cover and improved weather resistance in outdoor environments, make them ideal for drainage applications or sampling points that may be exposed to harsher conditions. Their compact and energy-saving design is an additional advantage.

Regulators

These elements ensure a clean and constant pressure supply of carrier gas (air, N_2, Ar, CO_2).

Digital flow switches and sensors

These elements allow accurate monitoring of the carrier gas flow, ensuring optimal conditions for analysis (e.g., efficient CO_2 entrainment in TOC analysers).

Pressure sensor for general fluids

With 316 stainless steel wetted parts and IP65 protection, this sensor is robust for monitoring pressure in sample or reagent lines, providing valuable data for analytical process control. Its analogue output (voltage/current) facilitates integration.

High purity valves

Chemically-resistant and low in particle generation, these valves ensure the safe handling of aggressive liquids and reagents. Their isolated structure prevents contamination, supporting accurate and reliable analysis.

Composite manifold

Made from PMMA or acrylic, this compact manifold simplifies fluid distribution while also saving space. Its corrosion-resistant design and reduced risk of assembly errors make it ideal for complex liquid analyser systems.

Air combination unit

This unit provides clean, stable air supply for carrier lines. Its modular, tool-free design ensures easy maintenance and reliable operation in demanding environments.

Fittings

SMC fittings offer secure, leak-free connections with excellent chemical resistance. Their easy installation and sealing performance help maintain fluid integrity and reduce maintenance time in sample and reagent lines.

Membrane air dryer

Delivers ultra-dry air without power or vibration, reaching dew points as low as -60 °C. This protects sensitive components from moisture, ensuring stable operation in systems using air as a carrier gas.

Where you can use:

Sample line

Reagent

Drain

Carrier gas

LPV Series +

Proportional control valve

- 2-port and 3-port type
- Easy tube replacement
- Highly resistant to contamination.

AR Series +

Regulator

- Easy to adjust
- Clean design with urban white colour
- Handle lock option available.

JSX Series +

2-port solenoid valve

- Environmental resistance with stainless steel coil cover
- Improved weather resistance in outdoor environments
- Space and energy-saving design.

PFMV Series +

Flow sensor and monitor

- Flow rate range: min.0.0 to 0.1, max.-3.0 to 3.0 l/min
- Response speed: 5 ms or less
- Grease-free
- 3-screen digital flow monitor available.

PSE56□ Series +

Pressure sensor for general fluids

- Wetted parts: stainless steel 316
- IP65
- Analogue output (voltage/current).

LVM Series +

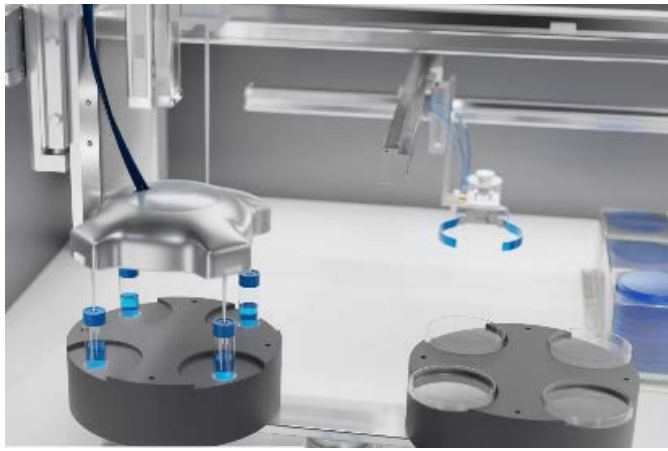
2/3-port solenoid valve for chemical liquids

- Low particle generation
- Oil-free / metal-free
- Isolated structure (diaphragm)
- Available with power-saving circuit.

PF2M Series +

2-colour display digital flow switch

- Wide range of flow measurement (flow ratio 100:1)
- Dry air, N_2, Ar, CO_2
- Grease-free
- IO-Link compatible.



TUL Series

2-layer fluoropolymer polyurethane tubing

- Flexible 2-layer tube
- Outer layer: polyurethane, inner layer: fluoropolymer
- Available in black, white, blue, and translucent.

VDW Series

Compact direct operated 2-port solenoid valve

- For air, medium vacuum, water
- Body material: aluminium, PPS, brass, SUS steel
- Low noise construction.

SRH Series

Clean regulator

- Contamination-controlled SUS steel
- Air, N_2, Ar, CO_2
- Oil-free.

Composite manifold

- PMMA/Acrylic compact manifold
- Space-saving
- Eliminate assembly error.

AC-D Series

Air combination unit

- Modular design with uniform body style
- Better visibility & environmental resistance
- No tools required.

LVA Series

High purity chemical valve

- Body materials: new PFA/Stainless steel/PPS
- Diaphragm materials: PTFE, EPR, or NBR can be selected
- Compatible with organic solvents.

KQ Series +

Fitting

- Body types: total of 51 models
- Selectable surface treatments.

LQ Series +

Fluoropolymer fittings

- Material: new PFA
- Triple-seal or quadruple-seal construction.

IDG-A Series +

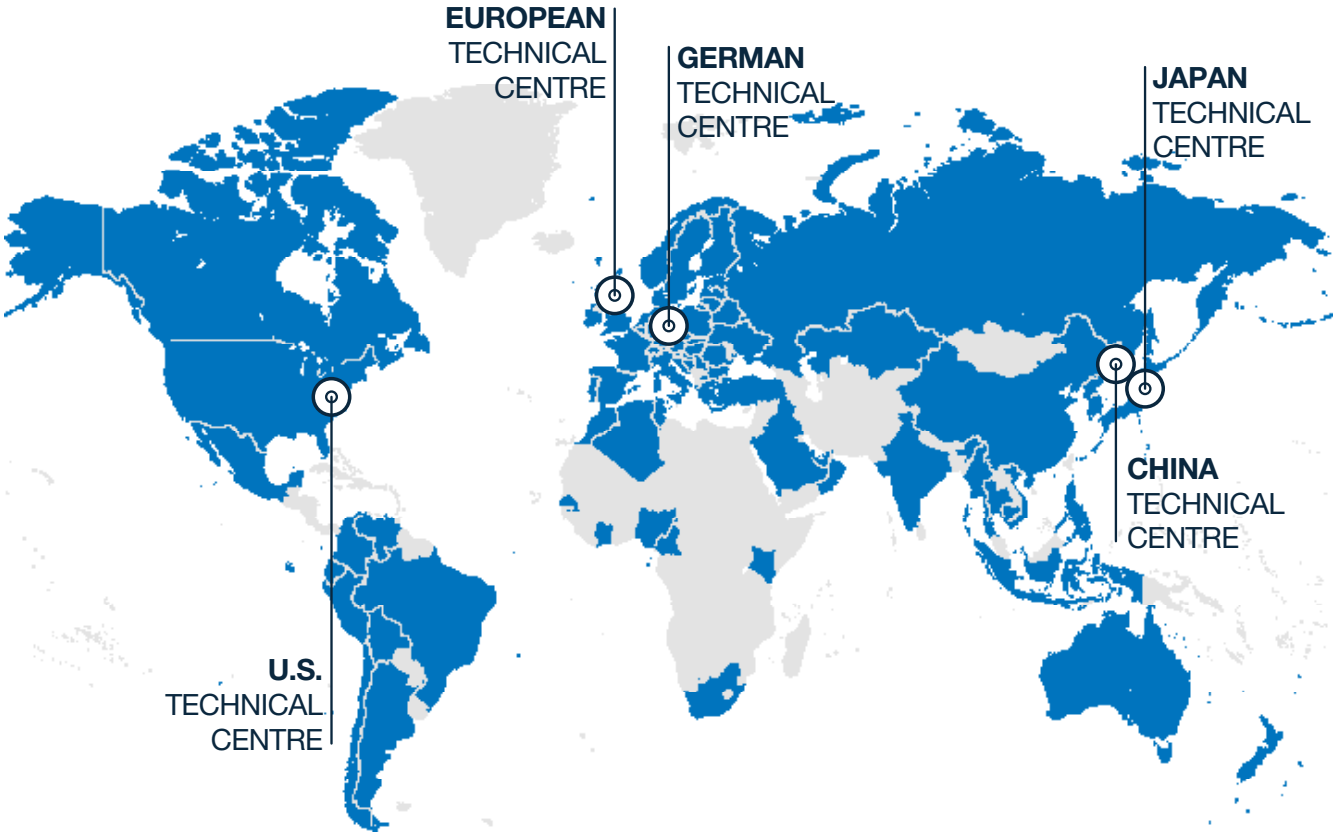
Membrane air dryer

- No power supply required
- Compatible with low dew points (-60 °C)
- No vibration or heat discharge.

Our support network

SMC's worldwide commitment

One of the things we do best at SMC is **being close to our customers**. Local support, on a global scale.



With **support** in over **500 locations** across **80 countries** and regions **worldwide**, our sales force of **7000 experts** maintains **close communication with customers**.

SMC Business Continuity Plan

Sustainable growth also means ensuring uninterrupted operations

We are committed to ensuring that SMC is prepared for any emergency and that our business activities will not stop in the event of such circumstances. SMC aims to fulfil our product supply responsibilities and maintain our customers' trust by contributing to both sustainable growth and the expansion of technological innovations.

SMC, as a comprehensive manufacturer of automatic control equipment that supports automation, is able to promptly provider products that meet our customers' needs anywhere in the world.

Production BCP
Ensure customer order fulfilment

Reliable delivery for you thanks to our 9 global logistic centres and 38 production sites worldwide, 10 of which are located in Europe. Moreover, flexibility to rapidly respond to any sudden change in the manufacturing environment.

Finance BCP
Safe & Solid financial base

In the event of an emergency, SMC can provide a safe and solid financial base (with cash, deposits, and equity capital) that will sufficiently cover the working capital and funds needed to rebuild buildings and the equipment required for business continuity. This is done to provide peace of mind to our customers and workers alike.

Information security BCP
Vital data kept safe

Strengthen information security for protection against computer viruses and cyberattacks, plus the installation of data centres to establish a disaster recovery system. Your information is safe with us.

Engineering BCP
Consistent technical support

2,100 engineers at our 5 technical centres around the globe (2 in Europe – Germany and UK).

Sales BCP
Consistent sales support

7,000 sales engineers worldwide ready to recommend the best solution for you. Over 80 global locations to make sure that wherever you are, we are there too.

Discover more

Expertise
Passion
Automation

SMC Corporation
1-5-5, Kyobashi,
Chuo-ku, Tokyo
104-0031, Japan
Telephone: 03-6628-3000
https://www.smcworld.com

Austria	+43 (0)2262622800	www.smc.at	office.at@smc.com
Belgium	+32 (0)33551464	www.smc.be	info@smc.be
Bulgaria	+359 (0)2807670	www.smc.bg	sales.bg@smc.com
Croatia	+385 (0)13707288	www.smc.hr	sales.hr@smc.com
Czech Republic	+420 541424611	www.smc.cz	office.at@smc.com
Denmark	+45 70252900	www.smcdk.com	smc.dk@smc.com
Estonia	+372 651 0370	www.smcee.ee	info.ee@smc.com
Finland	+358 207513513	www.smc.fi	smc.fi@smc.com
France	+33 (0)164761000	www.smc-france.fr	supportclient.fr@smc.com
Germany	+49 (0)61034020	www.smc.de	info.de@smc.com
Greece	+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	+36 23513000	www.smc.hu	office.hu@smc.com
Ireland	+353 (0)14039000	www.smcautomation.ie	technical.ie@smc.com
Italy	+39 03990691	www.smcitalia.it	mailbox.it@smc.com
Latvia	+371 67817700	www.smc.lv	info.lv@smc.com
Lithuania	+370 5 2308118	www.smclt.lt	info.lt@smc.com
Netherlands	+31 (0)205318888	www.smc.nl	info@smc.nl
Norway	+47 67129020	www.smc-norge.no	post.no@smc.com
Poland	+48 22 344 40 00	www.smc.pl	office.pl@smc.com
Portugal	+351 214724500	www.smc.eu	apoiocliente.pt@smc.com
Romania	+40 213205111	www.smcromania.ro	office.ro@smc.com
Russia	+7 (812)3036600	www.smc.eu	sales@smcru.com
Slovakia	+421 (0)413213212	www.smc.sk	sales.sk@smc.com
Slovenia	+386 (0)73885412	www.smc.si	office.si@smc.com
Spain	+34 945184100	www.smc.eu	post.es@smc.com
Sweden	+46 (0)86031240	www.smc.nu	order.se@smc.com
Switzerland	+41 (0)523963131	www.smc.ch	helpcenter.ch@smc.com
Turkey	+90 212 489 0 440	www.smcturkey.com.tr	satis.tr@smc.com
UK	+44 (0)845 121 5122	www.smc.uk	sales.gb@smc.com
South Africa	+27 10 900 1233	www.smcza.co.za	Sales.za@smc.com

www.smc.eu
Release DY
ENV-ANALYSER-A-EN