



MINIDUE

MECHANICAL PROPORTIONAL VOLUMETRIC DOSING PUMP

DATA SHEET

Domestic Line

SCTEC352 - REV. 5/2023



Purpose and Use

Lime deposits and corrosion are crucial problems affecting hot and cold sanitary water installations.

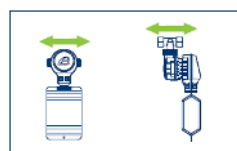
The proportional dosage of anti-scaling and anti-corrosive products is a safe and proven technology which helps in preventing scale deposition and corrosion processes. Polyphosphates, even at very low concentrations, are able to counteract the formation of scale and corrosion in hot and cold-water distribution lines. MiniDUE assures a precise and proportional dosage of AcquaSIL 2/15[®] (an aqueous solution of polyphosphates). It protects hydraulic systems and temperature exchange equipment from incrustation and corrosion. MiniDUE has a very resistant plastic polymer body and connection plate. There is a plastic Dima version available with threaded brass rings and nuts 1/2" F or with threaded plastic horizontal connection 1/2" M.

Operating

MiniDUE is a self-priming pump and you only have to open a tap to trigger it. MiniDUE is a mechanical pump that does not need any power supply: the operating is triggered by the water flow. The dosage, precise and proportional in every working condition, is started hydraulically by a mechanical system that, taking advantage of the water flow,

introduces controlled quantities of AcquaSIL 2/15[®]. The dosage of AcquaSIL 2/15[®] is therefore proportional to the water flow between the minimal flow rate and the peak flow rate (see technical data table). For flow under the minimal flow rate, the pump is not activated; for flow over the peak flow rate, the dosage of AcquaSIL 2/15[®] is reduced. So, in no case, MiniDUE 3/4" will overdose AcquaSIL 2/15[®].

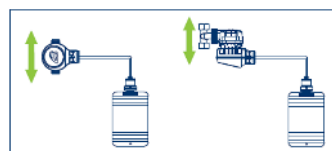
AcquaSIL 2/15[®] is inside flexible refills made of fully recyclable disposal multilayer material. This eliminates any chemical handling, making refill operation faster and safer. This operation makes MiniDUE installation easier even in very small space (wall-mounted boiler, for example).



PM004 PM005
PM005S

versione
con sacca
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A connecting kit for the remote installation of the refill is available (length of the aspiration pipe around 70 cm).



PM004 PM005
PM005S

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There is no automatic device to indicate that AcquaSIL 2/15[®] is finished but you can see it by the emptying/crushing of the refill. We recommend to check regularly the filling level of the refill. When the refill is empty, it is necessary to replace it. The dry operating does not cause any damage to the pump; however, without the dosage of AcquaSIL 2/15[®], there is no anti-corrosive and anti-scaling protection.



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Advantages of AcquaSIL®



AcquaSIL 2/15® is an aqueous solution of polyphosphates according to the standard EN 1212:2005 specific for drinking water treatment, is used to prevent scale and has an anti-corrosive action avoiding the “red water” phenomenon in systems with hard water. Through a mechanism known as “threshold effect”, the polyphosphates, if present in water at concentration of some mg/l, interfere with the carbonates crystallization phenomenon by inhibiting scale formation. In addition, the polyphosphates create a protective film on the metallic surfaces protecting from eventual corrosive phenomenon. AcquaSIL 2/15® does not only protect new equipment and hydraulic facilities but is also able to gradually restore the hydraulic circuits already encrusted. The products of AcquaSIL® range are formulated following a strict internal quality control protocol that, from food grade raw material, provides a safe product.

protection and, above all, the keeping of drinking water characteristics can only be ensured using AcquaSIL 2/15® together with MiniDUE.

The dosage of AcquaSIL 2/15® made by the dosing pump MiniDUE is accurate and proportional to the water flow and ensures a concentration of phosphorus up to 1,5 ppm as P. MiniDUE operating does never overdose AcquaSIL 2/15®.

Advantages of vacuum packaging

One of the great advantages of MiniDUE is the AcquaSIL 2/15® flexible refill. For the first time there is a refill without any handling: you only have to replace the refill once exhausted!

Depending on the needs, two refill sizes are available: 250 g and 1000 g. Vacuum packaging eliminates the contact of the product with the operator and air, drastically reducing contamination risk from outside. The flexible refill easily adapts to small spaces (built-in boilers) what would not be possible with rigid tanks. The practical remote connection kit allows to install the refill to a certain distance from the pump.

Key features

MiniDUE is completely self-priming: you only have to replace regularly the AcquaSIL 2/15® refill. The pump is protected from the backpressure by a non-return valve. This non-return system allows to replace the disposable refill while the MiniDUE pump is working. The high injection frequency ensures a homogenous dosing. MiniDUE with ½ connections is available in two versions: with ½” gas M connection (code PM004S) and with ½” gas F connection and Dima connection (code PM005S).



In addition, the connection kit for offline installation regarding the PM004S pump is available (item code AV017).

Intended use, conditions of use

MiniDUE has been specifically created to dose AcquaSIL 2/15® in drinking water mainly in domestic field and can be used to protect: boilers (domestic hot water), heating systems, water heater, cold water network, cooling system with disposable water, washing machine, dishwashers and other household appliances requiring hot water.

Maintenance and lifetime

Warning: this equipment needs a regular periodic maintenance in order to guaranty the potability requirements of the treated drinking water and maintain the improvements as stated by the manufacturer. MiniDUE requires that AcquaSIL 2/15® flexible refill will be regularly replaced. For a correct management of MiniDUE, we recommend to make at least two annual controls. For any information, please check the Manual of instructions for use and installation.



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Installation

The installation must be performed in a workmanlike manner, in compliance with all the laws, license plate data of the appliance itself and in accordance with local regulations. All the material used for the installation and maintenance of the drinking water facilities have to comply with local regulation. The pump installation introduces a change to the water distribution system and must therefore be done exclusively by a qualified professional and in accordance with local regulation. The installation schemes are intended to give the necessary indications for the correct operating of the equipment. The implementation of a hydraulic water distribution system in compliance with local requirements is out scope of this document. In any case, before proceeding to the installation, please read the Operating and Installation Manual supplied with the equipment.

Warnings

Protect from frost and bad weather avoiding contact with solvents and chemical products in general. See Performance and Technical Data for operating limit values. Follow instructions from the Operating and Installation Manual. MiniDUE pump doses exclusively AcquaSIL 2/15®. Warranties concerning MiniDUE, its performance and keeping the water potability characteristics decay when any product other than AcquaSIL 2/15® is used. Do not install MiniDUE upstream of boiler with solar heater system. The high temperature in those facilities can cause the quick degradation of AcquaSIL 2/15®, compromising the stabilized and protective properties.

Characteristics of the water to be treated

MiniDUE has been designed for treatment of water intended for human consumption (drinking water). The dosage of AcquaSIL 2/15® leads to increase the phosphorus concentration in the water. However, the phosphorus concentration in the treated water by MiniDUE is lower than 1,5 ppm as P. This value refers to water having, before being treated by MiniDUE, a P concentration < 0,02 mg/l.

Conformity and Standards



WRAS approved product (Water Regulations Advisory Scheme - complies with UK drinking water regulations.

ACS certified product (Attestation de Conformité Sanitaire) – complies with French drinking water regulations.

Italian drinking water regulations (DM n. 25/2012 and DM n. 174/2004).

Acqua Brevetti SRL has adopted an Integrated Management System QHSE (Quality, Health and Safety, Environment) certified in compliance with the following standards:

EN ISO 9001:2015

ISO 45001:2018,

EN ISO 14001:2015

Endowment:

MiniDUE pump, AcquaSIL 2/15® 250 g refill, remote installation kit, manual of instructions, Dima rotatable plate (PM005S only).



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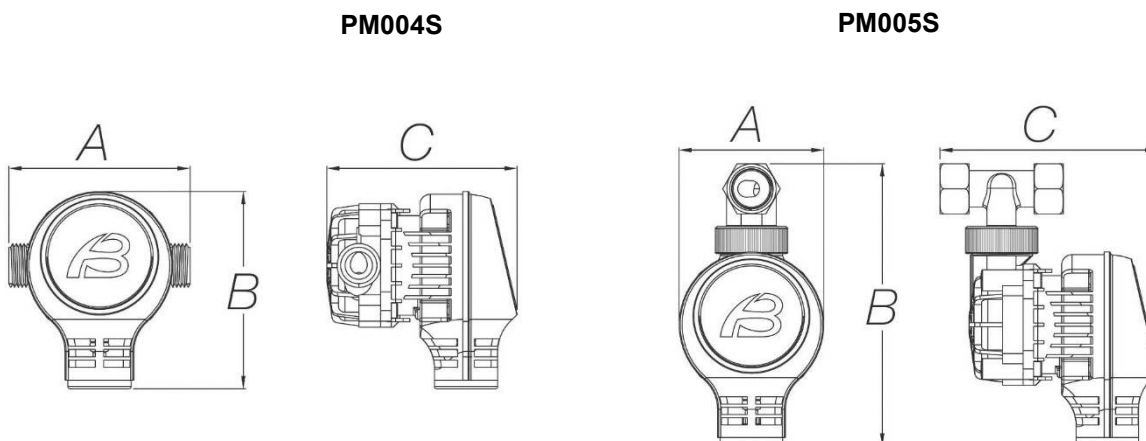
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Performances and technical data

DESCRIPTION	Unit	PM004S	PM005S
Connections	pollici	1/2" gas M	1/2" gas F
Minimum flow rate	m ³ /h	0,18	0,18
Flow rate ($\Delta P=0,5$ bar)	m ³ /h	0,7	0,7
Recommended min-max water hardness	°f	5 ÷ 35	5 ÷ 35
Dosage as P	ppm	< 1,5	< 1,5
Max. instantaneous heating temperature	°C	80	80
Min-max water pressure	bar	1,5 ÷ 10	1,5 ÷ 10
Min-max operating temperature	°C	5 ÷ 30	5 ÷ 30
250 g Refill autonomy	m ³	10-11	10-11
1000 g Refill autonomy	m ³	40-44	40-44

Overall dimensions

Item Code	Width - A	Height - B	Depth - C
PM004S	90	93	91
PM005S	70	136	105



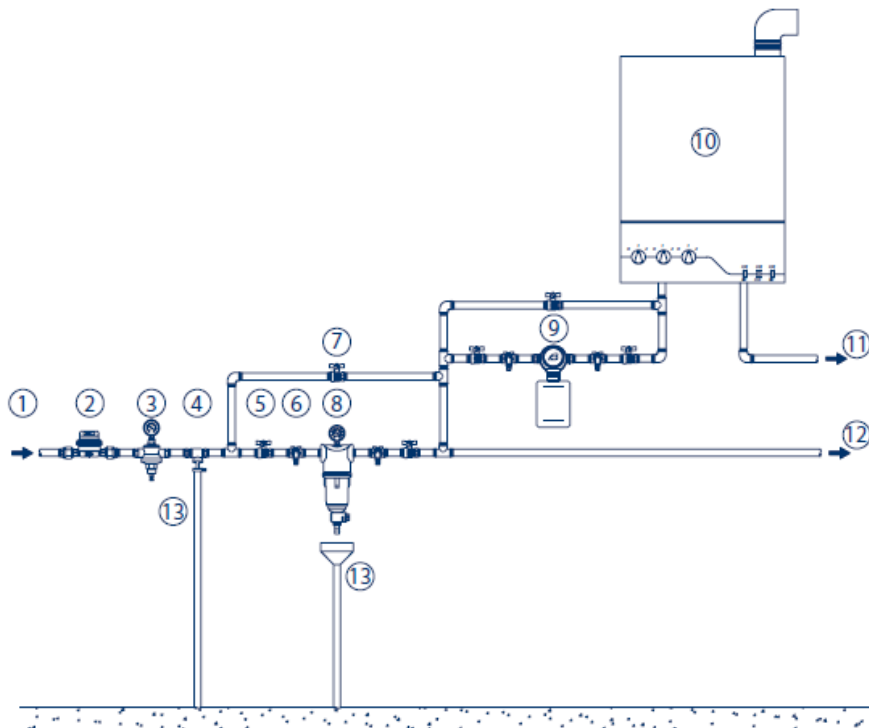


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Installation scheme example



Legend

- 1. Water inlet
- 2. Flow meter
- 3. Pressure reducer
- 4. Backflow preventer
- 5. Shut off valve
- 6. Sampling tap
- 7. By-pass valve
- 8. Protection filter
- 9. MiniDUE pump
- 10. Boiler
- 11. Treated hot water outlet
- 12. Cold water outlet
- 13. Drain.



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Azienda certificata
ISO 9001:2015



This Technical Data Sheet is based on the experiences of ACQUA BREVETTI SRL and applies to normal use of the product as described in this Sheet and in the Use and Maintenance Manual; any use other than as described must be authorized in writing. For regular management and maintenance of the systems we recommend stipulating an agreement with our Technical Assistance Centers. ACQUA BREVETTI SRL reserves the right to make any changes to its products even without notice. In accordance with the law, even partial reproduction of this work is prohibited and it remains the exclusive property of ACQUA BREVETTI SRL.