

SMART Digital > Intelligent Modular Dosing Pumps from Grundfos that are Easy to Operate

Grundfos is embarking on a new era in dosing technology with a brand new generation of pumps.

Intelligent dosing pumps with new drive and adjustment mechanisms represent the ideal solution for increasingly complex dosing applications with concentrated chemicals, some of them viscous, in water treatment and the process industry. They make life easier for users by keeping processes running precisely, reliably and cost-effectively.

SMART Digital dosing pumps meet these challenges by offering state-of-the-art drive technology, a whole new dimension in user-friendly operation and an intelligent FlowControl system. These properties ensure extremely precise, reliable and cost-effective processes combined with the best possible price-performance ratio.

In addition to the established benefits of Digital Dosing, the new SMART Digital offers:

Simplicity – simple handling and perfect overview and control even from the distance

The system is extremely easy to use thanks to the new click wheel and straightforward, intuitive navigation via a graphic LC display in more than 25 languages. The required flow can be set directly on the display in ml/h, l/h or gph.

It goes without saying that there are numerous modes of operation, inputs and outputs, which makes it easy to integrate the pump in any process. A great deal of additional

information is also available, such as the current system pressure, service information or the alarm protocol.



Alternatively, it can be positioned on the right or left on the pump casing simply by lifting and turning. This ensures optimum access to the user interface at all times, even with tricky installation/mounting scenarios.

The new pump family has a turn-down ratio of up to 1:3000 / 1:1000. The fact that a single pump can cover dosing rates of 2.5 ml/h to 7.5 l/h significantly reduces the number of different models required.

The optional E-box enables SMART Digital pumps to be integrated – and even retrofitted – in systems such as complex Profibus networks.



The large LC display, which is clearly visible from some distance, indicates the pump status. If the display is green, the pump is operating and everything is as it should be. In the event of a fault, such as an empty level signal, the display turns yellow (warning). A red background is used for an alarm situation, while white indicates that the pump has stopped.

Modularity – flexible and suitable for any environment or situation

The SMART Digital series has a universal mounting plate for all popular mounting methods. What's more, maximum flexibility is ensured by a control cube that can be rotated, a wide range of adjustments and supply voltages (100-240 V, 50/60 Hz), and a hydraulic connection kit.

Thanks to the integrated "click-stop" mounting plate, it is quick and easy to fit the pump in three different positions – on the floor, on a tank or, if required, directly on the wall without any additional accessories such as wall brackets. The click function also makes it quick and easy to remove the pump from the mounting plate if necessary. The clever arrangement of the mounting holes enables quick and easy substitution of both small pumps from the old Grundfos series and various other dosing pumps available on the market.

The control cube is delivered mounted at the front as standard.

Flow Intelligence – highest process reliability

The maintenance-free FlowControl system is based on a pressure sensor integrated in the dosing head. With this system, Grundfos is setting new standards when it comes to intelligent flow control. The focus is on process reliability. Even with variable process parameters, such as fluctuations in system pressure, it is possible to detect and prevent unwanted interruptions, inadequate or excessive dosing and even dangerous situations resulting from leaks or line breaks.

Digital drive technology with precisely defined diaphragm positioning uses a pressure sensor in the dosing head to provide an accurate depiction and diagnosis of the pressure profile and thus the dosing profile (see indicator diagram). Deviations from the norm result in a fault-specific change in the pressure profile.

This enables reliable diagnosis of the most common causes of faults that occur during dosing with diaphragm pumps. These faults are displayed in plain text in the alarm menu. Depending on the fault, the pump either reacts with a warning or an alarm (= stop). For example, if a line break causes the pressure to drop or it exceeds a freely selectable value, the pump automatically switches off. This prevents dangerous situations associated with chemicals escaping.

What's more, the AutoFlowAdapt function ensures that the dosing process continues with the required flow, even when subject to external influences. When dosing outgassing media, for example, motor control is automatically adjusted as soon as air bubbles are detected so that they can escape out of the dosing head. Fluctuating system backpressures no longer impact on the required flow either – deviations are automatically corrected by the stepper motor's speed regulation mechanism.

The integrated flow measurement function makes costly additional measuring equipment unnecessary. The current flow measurement is shown directly on the display and can also be integrated in the control room via the analog output if necessary.

