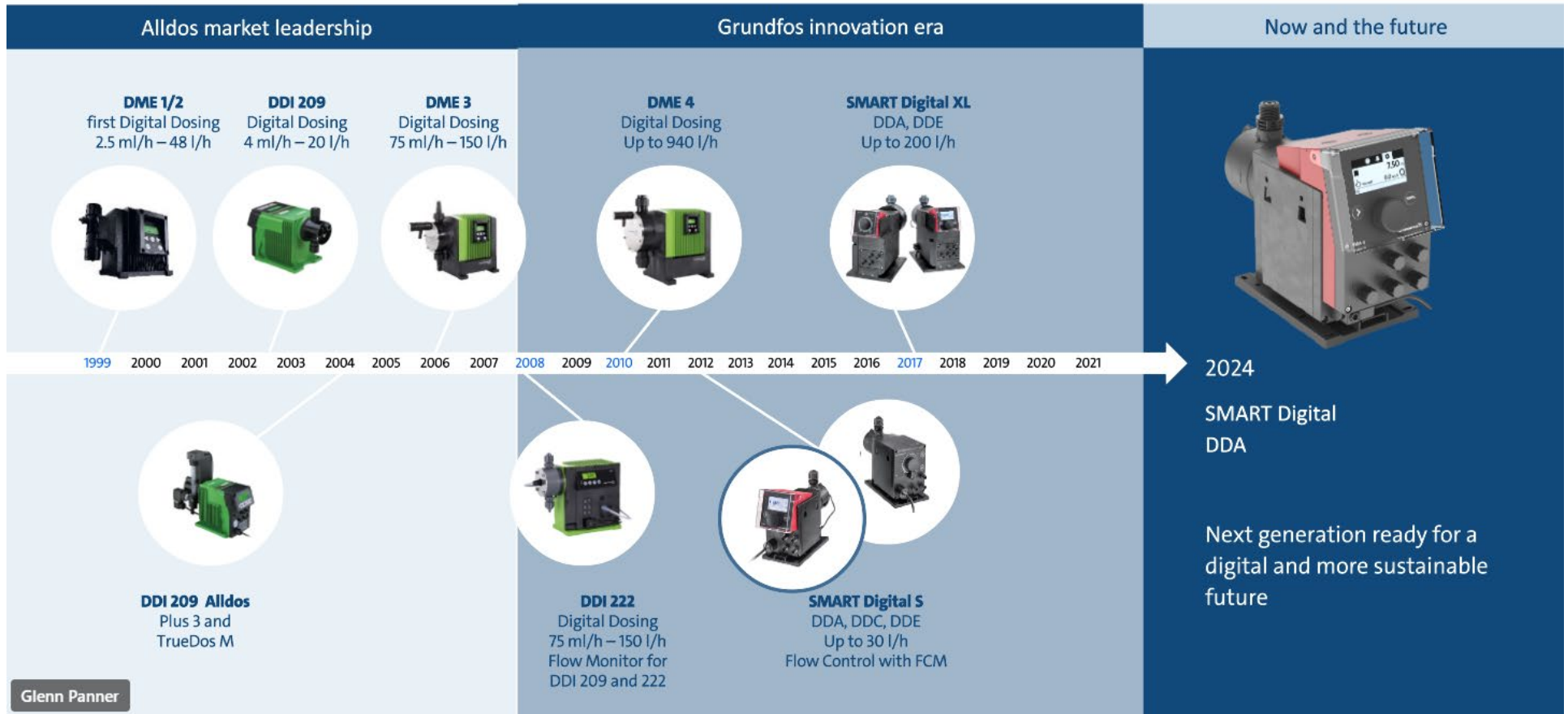


Digital Dosing evolution



The challenges operators face with their chemical feed



Lengthy and error-prone installation and start-up

Usually, dosing pump setup is done manually onsite and requires experience to ensure correct setup – potentially a long process. Programming a dosing pump can be challenging, time consuming and with a high risk of making mistakes. Wrong settings can lead to chemical spill with improper dosing putting the working environment and the complete installation at risk.



Requirement to be onsite for day-to-day operation

The user needs to be close to and touch the pump, to find the main operation parameters to view performance. This is time-consuming and the user is exposed to a hazardous environment. Managing and monitoring pumps remotely requires extra setup and can be complex and is often lacking in traditional pump systems. Installations that are geographically dispersed or require frequent monitoring can be especially challenging.



Difficult to troubleshoot and to plan service and maintenance

Time-consuming manual processes and scattered information can lead to inefficiencies, potential for errors, and difficulty identifying potential issues before they escalate:

- Keep firmware current
- Track individual pumps
- Expensive repairs
- Insufficient data collection for maintenance and reports
- No access to an overview of pump settings that can be shared

Easier to set up

What we kept

- Same technical dimensions and same mounting plate
- Modularity – position the control cube left, front or right



How you benefit

- Full flexibility while installing
- Easy replacement with new generation (avoid rework or redesign of pipework)



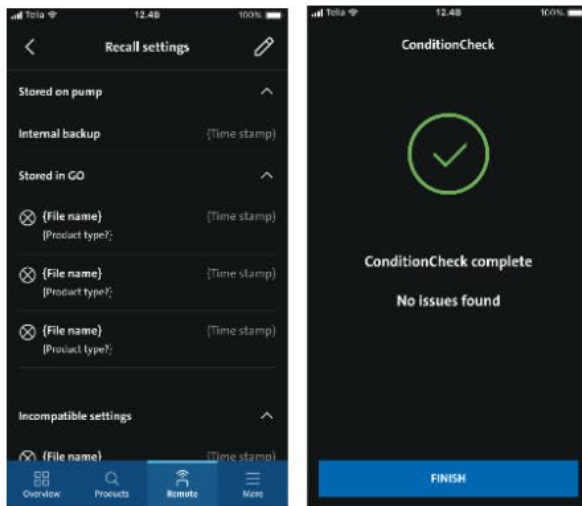
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Easier to set up

What's new

- Improved menu structure and interactive guidance during setup
- Remote setup using Grundfos GO App
- Multiple pump settings can be stored, recalled, shared and uploaded onto other pumps using Grundfos GO
- Embedded Modbus RTU and Modbus TCP for easy integration in fieldbus network
- ConditionCheck carries out fault diagnosis during setup



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How you benefit

- Save time and cost during setup, especially when installing multiple pumps with similar settings
- Avoid wrong settings and unintended changes
- Save cost: no additional communication modules (E-box/CIM-CUE) and wiring required when integrating the pump in a Modbus network
- Ensuring the installation will run smoothly, also the next day

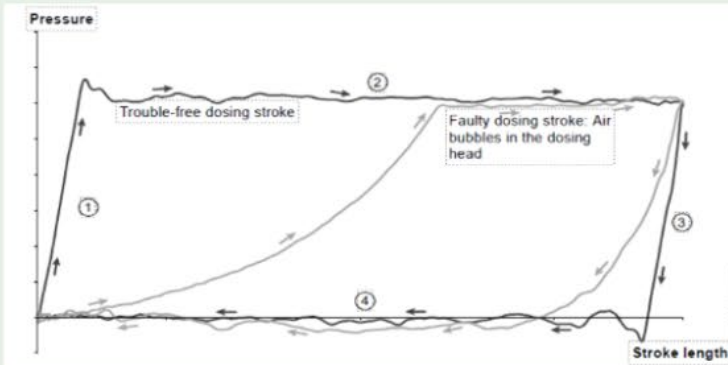


Easier to operate



What we kept

- Stepper motor drive technology
- Turn-down ratio 1:1000 (1:3000 on DDA 7.5-16) covering flows from 2,5 ml to 30 l/h with 4 variants
- Autodeaeration during stand-by
- SlowMode 50% and 25%
- FCM variant featuring pressure management, FlowControl, flow measurement and AutoFlowAdapt
- Traffic light concept
- Control who can access pump on what channel via Password protection and user profiles



Use the FCM diagram in the brochure 95726831/0812

How you benefit

- Continuous, homogeneous dosing with the best accuracy avoiding chemical spill
- Ensures optimal process control and steady results when doing proportional dosing or set point control
- Easy recognition of working mode and pumps status even from far distance
- Ability to handle out-gassing media; for example, Sodium Hypochlorite
- Ability to pump high viscosity media
- The patented FCM technology helps the pump operate the system in critical situations
- Less variants to cover a wide range means less different spare part kits needed





Easier to operate

What's new

- Traffic light concept extended with Bluetooth indication
- Flexibility on how to control the pump:
 - Manual on-site
 - Near range via smart device and Grundfos GO
 - Mid Range via integration in your SCADA System
 - Long range via SMART Digital CHEMPAIRING Suite and Grundfos Connect
- Digital firmware upgrades via Grundfos GO. If there is new software available, these can be easily transferred via your smart device
- Dashboards that show pump status and up to four parameters



How you benefit

- Easy recognition that the pump is connected to Grundfos GO
- Full options on how to control the pump
- Full information transparency wherever you go
- Future proof: fast bug fixes and new functionality integration without intervention from Grundfos Service
- No need of Grundfos Service intervention
- Monitor and follow-up on four parameters at-a-glance



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Easier to service

What we kept

- Robustness (Diaphragm vs Peristaltic)

What's new

- Access to the operational settings and Pump ID available through QR code
- Read out pump ID and settings by scanning a QR code and share the file with others
- Read out service data, send installation report
- All pump data as well as settings can be uploaded to the service report. Service report can be typed immediately in the GO App and signed off by the customer.
- New cube and front plate with electronic PCB and I/O board; front plate is available as a spare part
- Extended list of spare parts kits

How you benefit

- Diaphragm requires less maintenance, prevent leakages, improves dosing accuracy
- Save costs on extra service interventions
- Save time and limit the risk of faulty information when talking to service or backup team
- Pump follow up made easier. Save time on searching data on the pump.
- Saving costs by part replacement rather than pump replacement
- No need to replace the complete pump in case of an electronics failure
- Less waste contributes to a greener, more sustainable solution

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Better safety for operators

Access:

- Password protection avoids unintended access to pump settings and keys

Information:

- All events (errors, warnings) on the pump are stored in an alarm log for later
- Labelling and Naming of the pumps make it easy for operators to identify the correct pump in their SCADA system
- Dashboard showing 4 selected parameters allows quick identification of pump status

Process:

- The pump is constantly monitoring operation and ConditionCheck runs on start-up (FCM variant only)
- All malfunctions in the pump or around are detected with integrated sensor technology (FCM variant only)
- The pump will inform, react and guide the user to resolve the situation (FCM variant only)
- When changing settings that will impact operation an additional confirmation of setpoint is required



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Greater contribution to sustainability

- Accurate dosing with DDA reduces unnecessary water and chemical usage, which not only saves money but also reduces the environmental impact of the manufacturing process
- Dosing can help maintain consistent product quality, which can reduce waste and rework
- The new DDA helps to automate processes, reducing the need for manual interventions and improving overall efficiency and productivity



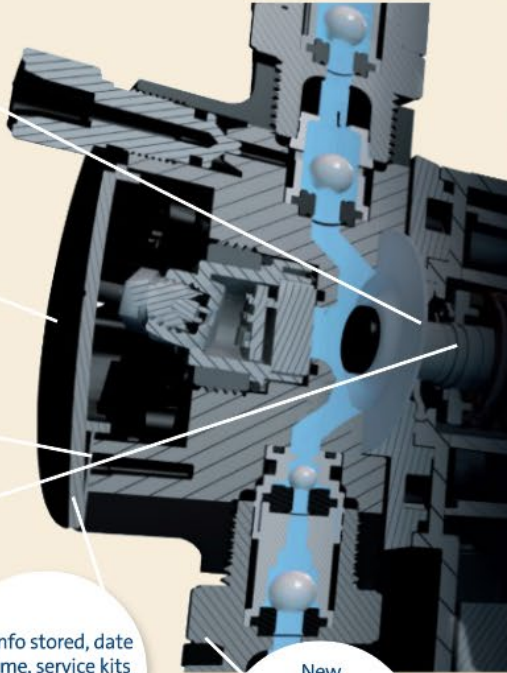
- The new service concept ensures an everlasting lifetime of the pump
- Critical parts are replaceable with spare parts



What else is new?

On the inside:

On the outside:



New hall sensor

Restart after power failure according to your settings

When changing settings that impact operation, a confirmation is required

Advanced UX for Pulse, Analog and Batch mode operation

All info stored, date & time, service kits needed, operating statistics

New electronics and software platform enables additional features and communication

New cover provides a better user experience

New display has a higher resolution

New Turning wheel for fast and precise navigation improve the UX with touch feeling

New foil provides a better tactile experience

New power connector (detachable)

This is how we meet the challenges operators face with their chemical feed



Lengthy and error-prone installation and start-up

1. Guided operation mode and settings
2. Transfer of pump settings to/from another pump
3. Maximum Capacity: Set the maximum allowed capacity of the pump
4. ConditionCheck: fault diagnosis during set-up (FCM-C)
5. ModBus RTU and ModBus TCP built-in



Requirement to be onsite for day-to-day operation

1. Dashboard with customised parameters (1 + 3)
2. Pump prepared for wireless remote monitoring and control or Cloud operation



Difficult to troubleshoot and to plan service and maintenance

1. Firmware updates available continuously via Grundfos GO
2. Overview of your install base (each pump can be named as you like)
3. New cube with electronic PCB and I/O board => front plate with PCB available as spare part
4. Access to the operational settings and Pump ID available through QR codes (2)
5. Read out service data, send installation report

The selling points unique to the DDA

Feature

Benefit

The only self-verifying pump:

Eliminate installation errors with ConditionCheck, our built-in technology that ensures optimal performance from the start.

Experience unparalleled precision:

Achieve superior accuracy with our integrated pressure sensor and patented technology, ensuring reliable performance in even the most demanding applications.

Unmatched control and communication:

Operate your pump your way. Choose from on-pump display, mobile app (Grundfos GO), email alerts, and a variety of wired and wireless connectivity options for seamless integration into your existing system

FCM: AutoFlowAdapt

'What you set is what you get': the pump will automatically adapt itself to maintain the setpoint

Grundfos as global solution provider

Get unmatched support from a global leader. We offer pre- and after-sales support and a wide range of certified products for any application

Variants

Capacity/maximum counter pressure is the same as the current DDA-S range:

- DDA 7.5-16
- DDA 12-10
- DDA 17-7
- DDA 30-4

Dimensions:

- For installation and mounting purposes, dimensions for the DDA S remain the same
- Only the new cube design has an impact on the dimensions
- See dimensions illustrated in the Annex

Electronics:

- Two variants will remain => AR-C and FCM-C (FC is no longer available)

Material selection:

- No changes, the same as the current DDA-S

Dosing head and valves:

- PVC, PP, PVDF and SS (no changes)

Gaskets:

- FKM, EPDM and PTFE (no changes, check possible combinations with dosing head and valve material)

Valve balls:

- Ceramic and stainless steel (only in combination with stainless steel dosing head and valves)



A recap of what's on offer

The new DDA SMART Digital offers next generation simplicity and precision:

- The best accuracy available for critical dosing tasks!
- Unrivalled dosing operation, integration and supervision
- The easiest and safest way to dose – now and in the future

What's new and easier:

- Safe setup and share settings with Grundfos GO on your smart device
- New 'cube' (front plate including PCB available as spare part) with I/O, turning wheel, transparent cover, display – and more!
- New power connection (similar concept as the SD-XL)

We've kept what we're renowned for in Digital Dosing™:

- Same stepper motor drive technology
- Same functional dimensions, modularity and mounting plate
- Same traffic light concept showing pump status remotely



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Appendix

Sales arguments:

No more headaches: Our 'transfer settings' feature reduces installation time and costs

No more necessary spend hours on-site programming pumps one-by-one. Introducing our innovative Transfer settings feature integrated in the pump via Grundfos GO app, a game-changer for saving you time and money!

What you gain with the DDA:

- Replicate your proven pump settings from one pump to another in few minutes, using our Grundfos GO app. No more tedious manual programming, translating to significant time savings on every installation. This translates directly to reduced installation costs and faster project completion.
- Eliminate the risk of human error during individual pump programming. With a in few taps, you can ensure all pumps operate under the exact same optimised settings. This reduces the need for costly service interventions to fix incorrect programming.
- Maintain consistent performance across your entire pump network. Replicate the ideal settings from a perfectly functioning pump to ensure all others perform identically. This translates to predictable performance and optimized system operation.

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What you avoid with the DDA :

- Wasting valuable time: Spending hours manually programming each pump individually, leading to longer project timelines and increased labor costs.
- Risking errors and frustration: Facing the possibility of human error during complex pump programming, potentially requiring costly service calls to fix incorrect settings.
- Sacrificing consistency: Struggling to maintain consistent performance across your pumps due to variations in manual programming, leading to potential inefficiencies.
- Spending time unnecessarily on troubleshooting: Pump settings are shared with the service partner.

Sales arguments

Get peace of mind from day one: Built-in fault diagnosis verifies pump performance during set-up

Traditional pumps leave you guessing, forcing you to return the next day for a nerve-wracking verification process.

But what if you could eliminate that anxiety? Introducing our innovative pumps with ConditionCheck; the Grundfos built-in fault diagnosis during set-up! This feature is like having a personal pump expert by your side, ensuring a correct installation performing at the highest level every time.

What you gain with the DDA:

- Unwavering confidence: Run a series of built-in tests during set-up to verify pump functionality across various scenarios. This gives you the instant peace of mind that everything's operating perfectly.
- First-time finish: No need for costly second visits to troubleshoot potential issues. Diagnose any problems right there, on the spot. This saves precious time and resources, allowing you to move on to the next project with confidence.
- Effortless expertise: Our ConditionCheck the intuitive fault diagnosis system easily identify and address any concerns during set-up, boosting your credibility and impressing your clients.

What you avoid with the DDA:

- Worrying wait: Leave an installation with a nagging feeling of uncertainty, leading to sleepless nights and unnecessary stress.
- Return engagement: Waste valuable time and resources on follow-up visits to verify pump functionality, potentially leading to project delays and dissatisfied clients.
- Troubleshooting tribulations: Spend valuable time diagnosing potential problems in the field, a process that can be confusing and time-consuming.

Sales arguments

Next generation simplicity and precision

SMART Digital is your partner in dosing: the pump handles problems by itself and, if it cannot, it communicates the issue clearly to the user. You get full access and transparency from everywhere anytime. Access onsite, via phone, from company network or remotely ~~from the beach~~.

Supporting your sustainability agenda:

- Accurate dosing reduces unnecessary water and chemical usage
- Dosing can help maintain consistent product quality, which can reduce waste and rework
- Helps to automate processes, reducing the need for manual labour and improving overall efficiency and productivity
- The service concept was developed for an everlasting lifetime of the pump
- Critical parts are replaceable with spare parts

Next generation simplicity and precision:

- **The best accuracy available for critical dosing tasks!**
Already the most accurate dosing pump available, the new DDA makes next level process reliability possible
- **Unrivalled dosing operation, integration and supervision**
The new DDA presents a world of possibilities for remote integration and supervision using the Grundfos GO app
- **The easiest and safest way to dose – now and in the future**
Redesigned to improve reparability and sustainability, the new DDA is the easiest and safest to use, service and maintain

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