

Smart Digital

# GRUNDFOS DDA/DDC/DDE

The SMART Digital DDA, DDC and DDE models with powerful variable-speed stepper motors bring state-of-the-art technology to perfection. Expert knowledge combined with the new patented solutions set the standard for the future. Traditional technologies such as stroke length/stroke frequency adjustment with synchronous motor or solenoid drive become a thing of the past. The click-stop mounting plate provides unique mounting flexibility, and the entire dosing range up to 8 gph is covered with only a few pump variants.



## KEY FEATURES AND BENEFITS

- Modularity: The included click-stop mounting plate is an example of the unique flexibility offered, with only a few variants
- Simplicity: Easy handling and perfect overview and control ensure simple installation, commissioning and operation
- Flow intelligence: The pump monitors the dosing process of liquids when the FlowControl function is activated, for advanced process reliability with accuracy of 1% of setpoint

## DDA MODELS

- High-end solution for complex and demanding applications
- Flow and pressure up to 8 gph and up to 232 psi
- Auto-deaeration during pump standby
- Flexible Fieldbus control
- Turn-down ratio 3000:1 with constant 100% stroke length

## DDC MODELS

- Optimal price-performance ratio
- Flow and pressure up to 4 gph and up to 145 psi
- Two SlowMode functions (25% and 50%), calibration mode, service display
- External stop, dual-level tank control, 2 relay outputs

## DDE MODELS

- Digital Dosing™ even for the low budget segment
- Flow and pressure from 0.0015 to 4 gph and up to 145 psi; two models cover entire range
- Control options: manual control 0.1-100%, pulse in % of stroke volume
- External stop, empty tank control

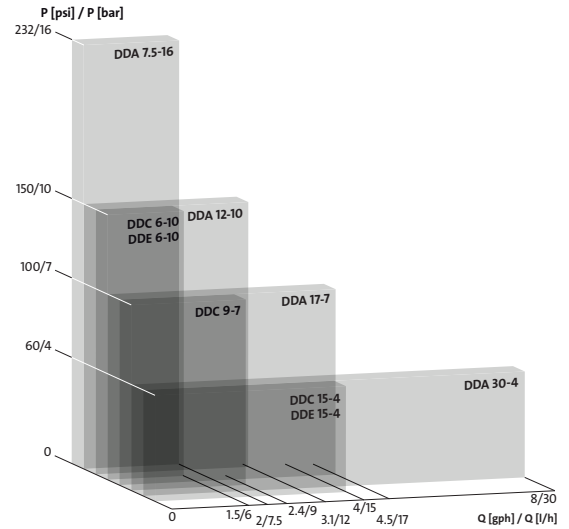
## APPLICATIONS

- Disinfection and pH adjustment
- Drinking water, process water and wastewater
- Food and beverage
- Clean-in-place
- Ultrafiltration and reverse osmosis
- Boiler feed water
- Cooling towers
- Coagulation, flocculation, precipitation
- Chemical industry
- Car wash
- Irrigation
- Anywhere chemical treatment and conditioning of water is required

**TECHNICAL DATA & FEATURE OVERVIEW**

DDA/DDC/DDE	
<b>DOSING HEAD:</b>	PP, PVC, PVDF and Stainless Steel 1.4401
<b>GASKETS:</b>	EPDM, FKM or PTFE
<b>VALVE BALLS:</b>	Ceramics or stainless steel 1.4401 (SS heads only)
<b>CONNECTION SETS (SUCTION / PRESSURE):</b>	Tubing: 1/4", 3/8", 1/2" Threaded: 1/2" MNPT for PP, PVC and PVDF; 1/4" FNTF for SS
<b>MAX FLOW, Q:</b>	8 gph (30 l/h)
<b>MAX PRESSURE, P:</b>	232 psi (16 bar)
<b>TURNDOWN RATIO:</b>	3000:1 or 1000:1
<b>LIQUID VISCOSITY:</b>	max. 2500mPas, depending on model and setup
<b>SUPPLY VOLTAGE:</b>	100-240V, 50-60 Hz
<b>POWER CONSUMPTION:</b>	max. 18 W
<b>WEIGHT:</b>	5.3-8.8 lbs (2.4-4 kg), depending on material
<b>SOUND PRESSURE LEVEL:</b>	60 dB(A)
<b>ENCLOSURE RATING:</b>	IP65, NEMA 4X
<b>APPROVALS:</b>	NSF61, CSA-US

**PERFORMANCE RANGE**



**FEATURE OVERVIEW**

PUMP TYPE	DDA			DDC		DDE		
	FCM	FC	AR	AR	A	PR	P	B
<b>CONTROL VARIANT</b>								
<b>OPERATION MODES</b>								
Manual speed control		•	•	•	•	•	•	•
Pulse control in ml/pulse		•	•	•	•			
Pulse control (1:n)						•	•	
Analog control 0/4-20 mA		•	•	•	•			
Batch control (pulse-based)		•	•	•				
Dosing timer cycle		•	•	•				
Dosing timer week		•	•	•				
Fieldbus control		•	•	•				
<b>FUNCTIONS</b>								
Auto deaeration also during pump standby		•	•	•				
FlowControl system with selective fault diagnosis		•	•					
Pressure monitoring (min/max)		•	•					
Flow measurement		•						
AutoFlowAdapt		•						
SlowMode (anti-cavitation)		•	•	•	•			
Calibration mode		•	•	•	•			
Scaling of analogue input		•	•	•				
Service information display		•	•	•	•			
Relay setting: alarm, warning, stroke signal, pump dosing		•	•	•	•	•		
Relay setting (additionally): timer cycle, timer week		•	•	•				
<b>INPUTS/OUTPUTS</b>								
Input for external stop		•	•	•	•	•	•	•
Input for pulse control		•	•	•	•	•	•	•
Input for analogue 0/4-20 mA control		•	•	•				
Input for low-level signal		•	•	•	•	•	•	•
Input for empty tank signal		•	•	•	•	•	•	•
Output relay (2 relays)		•	•	•	•	•		
Output, analogue 0/4-20 mA		•	•	•				
Input/output for GeniBus		•	•	•				
Input/output for E-box (eg. EtherNet/IP)		•	•	•				

**CONTROL VARIANTS**

- FCM: Flow Control Measurement
- FC: Flow Control
- PR: Pulse Relay
- P: Pulse Input
- AR: Analog Relay
- A: Analog
- B: Basic

**FIELDBUS CONTROL OPTIONS**

- Profibus DP (E-Box 150)
- Modbus RTU (E-Box 200)
- Profinet IO, Modbus TCP or EtherNet/IP (E-Box 500)

Visit [grundfos.us/pei](http://grundfos.us/pei) to learn more about Department of Energy (DOE) pump energy index (PEI) requirements and PEI ratings on specific Grundfos models.