

SMART Digital – DDA with **PROFIBUS DP / Modbus RTU / PROFINET IO / Modbus TCP** – for industrial automation

The SMART Digital dosing pump range DDA is available with an E-box 150 which hold a CIM 150 PROFIBUS-DP interface. This is a standard interface for data transmission between a PROFIBUS DP network and a Grundfos pump. It makes data exchange possible between Grundfos DDA and a PLC or SCADA system.

An E-box 200 for Modbus RTU enable a communication with the Modbus RTU protocol. An E-Box 500 support Modbus TCP or PROFINET protocol.

Connecting a large dosing pump DDA XL require a related CIU interface

No custom programming is needed to integrate the CIM 150 in a PROFIBUS network. System integration is very straight-forward with standard GSD file.

The communication box (E-box) can be installed later (retrofit installation). When connecting the DDA to the E-box you only have to connect the internal GENIbus by wire between pump and E-box. Via the Display on the DDA you can easily set the bus address. For each DDA an own E-box is required.

Supported products

- > DDA Control variant FCM
- > DDA Control variant FC
- > DDA Control variant AR

Advantages at a glance

- > Remote control and monitoring of DDA SMART Digital dosing pump
- > Integration into industrial automation systems (PLC; SCADA)
- > Modular design – prepared for future needs
- > Retrofit of E-box possible
- > Easy installation and commissioning
- > The IP65 data cable inputs ensures reliable protection in harsh environments



DDA E-Box

PROFIBUS -DP Communication (E-box 150)

Protocol	PROFIBUS DP
Implementation Class	DP-V0
Transmission speeds	9600 bps to 12 Mbps
Slave address	1 – 126, set via DDA display

The DDA has to be mounted directly on the top of the E-box and a bus cable has to be connected between DDA and E-box.

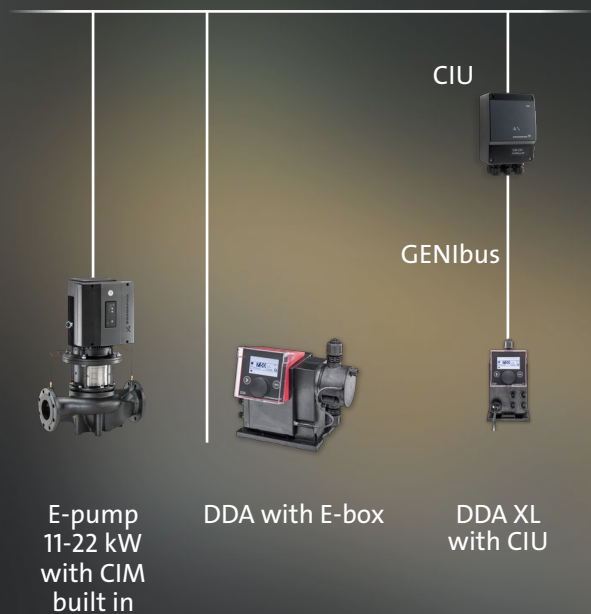
Modbus RTU Communication (E-box 200)

Protocol	Modbus RTU
Transceiver	RS-485
Transmission speeds	1.2, 2.4, 4.8, 9.6, 19.2, 38.4 kbits/s
Slave address	1-247, set via DDA display

PROFINET or Modbus TCP Communication (E-box 500)

Protocol	PROFINET IO Modbus TCP (set via rotary switch)
Transmission speed	10 / 100 Mbits/s
Ports	2 x RJ45
PROFINET Conformance class	B

Fieldbus example:



Data points

DDA E-box 150/ 200 or E-box 500	Control variant FCM	Control variant FC	Control variant AR
*) DDA XL require a related CIU 150/ 200 / 500			
Control			
Operating Mode (Start, Stop, Service, Calibrating), Functions (Slow mode, Viscosity selection), Deaerating mode	•	•	•
Function Enable/Disable (AutoDeaerating, FlowMonitor, Profibus Watchdog, AutoFlow, PulseMemory)	•	•	•
Pulse signal from bus	•	•	•
Reset Fault and Volume Counter	•	•	•
Control Mode (Manual, Pulse, Analogue, Timer, Batch)	•	•	•
Set Manual Flow Setpoint	•	•	•
Set Pulse Volume	•	•	•
Set Batch Volume	•	•	•
Set Batch Dosing Time	•	•	•
Set Flow Monitor Pressure Alarm Limit	•	•	•
Relay Control of Relay 1 and 2	•	•	•
Set Analog Output	•	•	•
Set Date & Time	•	•	•
Status			
Operating Mode Status	•	•	•
Control Mode Status	•	•	•
Alarm/warning/dosing (running) Status	•	•	•
Actual Manual Flow Setpoint	•	•	•
Actual Pulse Volume Setting	•	•	•
Actual Batch Dosing Volume Setting	•	•	•
Actual Batch Dosing Time Setting	•	•	•
Actual Flow Monitor Pressure Alarm Limit Setting	•	•	•
Control Source (HMI, External, Bus)	•	•	•
Fault & Warning Code	•	•	•
Warning Status Bits	•	•	•
Actual Date & Time	•	•	•
Max Dosing Pressure	•	•	•
Max Dosing Capacity	•	•	•
Resulting Dosing Capacity Setpoint	•	•	•
Remaining Dosing Volume	•	•	•
Total Dosed Volume	•	•	•
Volume Trip Counter	•	•	•
Actual Analog Output Signal	•	•	•
Digital Outputs	•	•	•
Number Of Starts	•	•	•
Run Time	•	•	•
Total On Time	•	•	•
Stroke Counter	•	•	•
Time To Next Dosing	•	•	•
Measured Data			
Digital Inputs	•	•	•
Analog Input Signal	•	•	•
Pulse Input Frequency	•	•	•
Measured Dosing Capacity	•	•	•
Measured Dosing Pressure	•	•	•

Note: Large dosing pump DDA XL require CIU interface