

# Grundfos Dosing Pumps & Accessories

## Price List February 2020

### Category 5

#### ➤ **SMART Digital** Breaking the barriers of dosing



## PLEASE NOTE THE FOLLOWING FROM OUR TERMS AND CONDITIONS OF SALE:

A copy of our full terms and conditions are available at the back of this price list

All prices are delivered at place (DAP) and subject to VAT at the standard rate.

### MINIMUM ORDER VALUE

Our minimum order value is **£55.00 NET**. Orders between the minimum order value and the low order threshold of **£335.00 NET** for pumps or **£130.00 NET** for Category 4, S1,S2,S3,S4 items will be subject to a **£37.00 NET** handling fee.

### EXPRESS DELIVERY OPTIONS;

#### INTERSPEED (PER ITEM) (above **150 Kgs** – subject to transport availability and additional cost)

- CR(I)(E), CRN(E) Vertical Multistage
- Non-stock SP/SPA models (with or without drop cable cut in 5 metre increments. Please note; resin cable joint will take 24 hours to set)
- Order must be received electronically by **10.45am** – despatch same day, **delivery by Express Carrier Service** – UK (\*note restrictions apply)  
**£75.00 NET (PER ITEM)**

#### BOXSPEED (PER ITEM) – from UK/European DC (above **100 Kgs** – subject to transport availability and additional cost)

- ALPHA, UPS, UPN, UPS3/UPM Circulators
- Magna (D) Glandless Circulators
- UP/UPS/Magna Replacement Heads/Terminal boxes
- TPE(D), NB(E) Glanded
- CM, CME Horizontal Multistage, CMB(E), Boosters, Scala
- JP, MQ and Tanks/Vessels (up to 500 Litre)
- AP, KP, CC, SL1, SLV, Unilift, Sololift
- SQ, SQE, SB(A), SP2A, 3A & 5A >1.5kW (**Excluding pumps with cable fitted as well as SP longer than 2.4 metres**)
- Motors, Flanges & Unions, Pump Components, Chamber Stacks
- Order must be received electronically before **13:30pm** – despatch same day, **delivery by Express Carrier Service** – UK (\*note restrictions apply)  
**FIRST ITEM - £55.00 NET & ADDITIONAL ITEMS £20.00 EACH (PER ORDER)**

#### SPARESPEED (PER ITEM)

- Only applies to spares kits, (**not chamber stacks, components, pump heads or terminal boxes**)
- Order must be received electronically before **13:30pm** – despatch same day, **delivery by Express Carrier Service** – UK (\*note restrictions apply)  
**FIRST ITEM - £45.00 NET & ADDITIONAL ITEMS £20.00 EACH (PER ORDER)**

\* Express Carrier Service ONLY guaranteed if placed on time via Extranet/EDI. Deliveries to the Highlands, certain mainland post codes and offshore UK may take an extra day. All services are dependent on component and product availability. Grundfos can guarantee despatch or availability for collection same day but cannot guarantee delivery. Grundfos cannot accept any cancellations or amendments once the goods have been despatched. Cancellations are subject to the Product Returns Fee below.

### SPARES STANDARD DELIVERY CHARGE

- A **£20.00 NET** handling fee will be applied, per order, to all orders for spares, pump components, spares kits.
- This charge does NOT apply if **SPARESPEED**, express service or our online ordering system (EDI), and/or Extranet are used for order placement.

### PRODUCT RETURNS FEE

- On receipt of written agreement from Grundfos, items can be returned and will be subject to a **minimum 35% restocking fee**. Goods must be returned in their original packaging and within **6 months of date of despatch**. All returns will be subject to inspection, to ascertain age, condition and product type and can incur an increased restocking charge. Please contact [grundfos-uk@sales.grundfos.com](mailto:grundfos-uk@sales.grundfos.com) with the original purchase order, to arrange collection. Do not send items to Grundfos as they will be refused delivery, collection will be arranged.
- Items or multiple items from the same Purchase Order must exceed the total Net value of £150

#### Exclusions to Product Returns apply;

- **All Service kits, cable including attached to pump, assembled/3<sup>rd</sup> party/engineered to order product, and obsolete/phased out product cannot be returned.**

### STORAGE CHARGE

- There will be a **2%** storage charge of the item invoice value, payable per month, commencing one month from the date the goods were available for delivery from Grundfos.

### WARRANTY PERIOD

- Grundfos pumps are warranted for 24 months from installation or 30 months from manufacture; whichever is the sooner.
- There is a five-year warranty that covers manufacturing or material defects on domestic heating circulators: UPS3 15-50/65, UPS2 15-50/60, ALPHA models, Amazon & Amazon Universal shower pumps. From 1<sup>st</sup> March 2017 SCALA2 booster pumps when used in domestic applications.

### SERVICE AND COMMISSIONING

Grundfos offers a wide range of service, repair and commissioning options. Please contact Service on 01525 850000 or email [servicesupportuk@grundfos.com](mailto:servicesupportuk@grundfos.com)

### ORDER TRACKING AND PROOF OF DELIVERY

- Order status and Proof of Delivery can be obtained via Grundfos Extranet or MyGrundfos online portals.
- For extranet access contact [grundfos-uk@sales.grundfos.com](mailto:grundfos-uk@sales.grundfos.com) and Self-registration for MyGrundfos can be found here; <https://uk.grundfos.com/mygrundfos>

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## SMART Digital Dosing Pumps

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8. FCM/FC	Pressure valves	DDA-S/XL
9. DDA-AR	Analogue Relay	DDA-S
11. DDA-AR	Analogue Relay	DDA-XL
12. DDA-AR	Diaphragm Failure Sensor	DDA-XL
14. DDC-AR	Analogue Relay	DDC-S
16. DDC-A	Analogue input	DDC-S
18. DDE-AR	Analogue Relay	DDE-XL
19. DDE-PR	Pulse Relay	DDE-S
20. DDE-P	Pulse	DDE-S
21. DDE-B	Basic	DDE-S
22. DDE-B	Basic	DDE-XL
23. Cables	DDA / DDC / DDE	
23. Fabricated wall / tank assembly		DDA-XL

## DME 375 and 940 Digital Dosing Pumps

24. DME-AR	Analogue Relay
24. DME-AP	Profibus
25. Diaphragm Leakage Sensor	
25. Cables	DME

## DMX Mechanical Diaphragm Dosing Pumps

26. DMX	Budget dosing pumps - SHORT AVAILABILITY
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## DMH Piston Hydraulic Diaphragm Dosing Pumps

28. DMH	4 bar to 10 bar - up to 1,150 l/hour
28. DMH	16 bar - up to 23 l/hour
29. DMH	16 bar to 200 bar - up to 680 l/hour

## Dosing Pump accessories

30. Hose
31. Foot valves
32. Rigid suction lances without level control
33. Rigid suction lances including level control
34. Level control units
34. Tank adaptors for suction lances and footvalves
34. Emission protection kits
34. M-12 plug adaptor
35. Injection units
35. Injection units for larger pumps
36. Injection units for sodium hypochlorite
36. Injection units with ball valve
36. Withdrawable injection units
36. Hot-injection units with ball valve
37. Multi-function valves (5/8" only)
37. Pressure relief valves
38. Pressure relief valves for larger pumps
38. Pressure loading valves
38. Pressure loading valves for larger pumps
39. Pressure valves (required for SMART FC and FCM pumps)
39. Suction side pulsation damper with calibration scale
39. Manual vacuum pump kit for suction pulsation damper
40. Calibration pots
40. Vacuum pump kit for calibration pot
40. Discharge side pulsation damper DB without pressure gauge
41. Discharge side pulsation damper DBG with pressure gauge
41. Discharge side pulsation dampers DB without pressure gauge DME & DMH
42. Pressure gauges
42. Filling device for pulsation dampers
42. Tyre valve adaptor (Schrader valve)
43. Pump connection kits
44. Inlay kits
45. Threaded adaptors
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45. Union nut adaptors
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## Dosing Tanks and accessories

47. Dosing stations/tanksets and Dosing tanks
48. Square tank, 100 litre
48. Bunds
48. Accessories for dosing tanks
49. Electric mixers, single phase motor
50. Electric mixers, 3 phase motor
50. Pump adaptor plates for tank mounting

For further technical information please refer to the relevant data booklet or technical information for each item.

The list of pumps is not exhaustive. We have further ranges of dosing pumps with the additional options:

- larger capacities up to 8000 l/hours
- pressures up to 200 bar
- different materials including Hastelloy and special coatings for very aggressive applications
- many different motor variants and control options
- ATEX certified and API certified options
- traditional servomotor control and inverter drive options

Other options are available, please contact your local sales office

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-FCM

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-S FCM	7.5	10	DDA 7.5-16 FCM-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722014	2,281
			DDA 7.5-16 FCM-PVC/E/C-F-31I001FG	PVC/EPDM/cer.		✓	97722015	2,376
			DDA 7.5-16 FCM-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722016	2,301
			DDA 7.5-16 FCM-PVC/E/C-F-32I001FG	PVC/EPDM/cer.	✓	✓	97722017	2,396
			DDA 7.5-16 FCM-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97722018	2,281
			DDA 7.5-16 FCM-PVC/V/C-F-31I001FG	PVC/viton/cer.		✓	97722019	2,376
			DDA 7.5-16 FCM-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97722020	2,301
			DDA 7.5-16 FCM-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97722022	2,396
			DDA 7.5-16 FCM-PVC/T/C-F-31I001FG	PVC/PTFE/cer.		✓	97722023	2,491
			DDA 7.5-16 FCM-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97722024	2,416
			DDA 7.5-16 FCM-PVC/T/C-F-32I001FG	PVC/PTFE/cer.	✓	✓	97722025	2,511
		16	DDA 7.5-16 FCM-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722006	2,251
			DDA 7.5-16 FCM-PP/E/C-F-31I001FG	PP/EPDM/cer.		✓	97722007	2,346
			DDA 7.5-16 FCM-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722008	2,271
			DDA 7.5-16 FCM-PP/E/C-F-32I001FG	PP/EPDM/cer.	✓	✓	97722009	2,366
			DDA 7.5-16 FCM-PP/V/C-F-31U2U2FG	PP/viton/cer.			97722010	2,251
			DDA 7.5-16 FCM-PP/V/C-F-31I001FG	PP/viton/cer.		✓	97722011	2,346
			DDA 7.5-16 FCM-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97722012	2,271
			DDA 7.5-16 FCM-PP/V/C-F-32I001FG	PP/viton/cer.	✓	✓	97722013	2,366
			DDA 7.5-16 FCM-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722026	2,379
			DDA 7.5-16 FCM-PV/E/C-F-31I001FG	PVDF/EPDM/cer.		✓	97722027	2,473
			DDA 7.5-16 FCM-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722028	2,398
			DDA 7.5-16 FCM-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97722030	2,379
			DDA 7.5-16 FCM-PV/V/C-F-31I001FG	PVDF/viton/cer.		✓	97722031	2,473
			DDA 7.5-16 FCM-PV/V/C-F-32U2U2FG	PVDF/viton/cer.	✓		97722032	2,398
			DDA 7.5-16 FCM-PV/V/C-F-32I001FG	PVDF/viton/cer.	✓	✓	97722033	2,493
			DDA 7.5-16 FCM-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97722034	2,493
			DDA 7.5-16 FCM-PV/T/C-F-31I001FG	PVDF/PTFE/cer.		✓	97722035	2,588
			DDA 7.5-16 FCM-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97722036	2,513
			DDA 7.5-16 FCM-PV/T/C-F-32I001FG	PVDF/PTFE/cer.	✓	✓	97722037	2,608
			DDA 7.5-16 FCM-SS/T/SS-F-31AAFG	SS/PTFE/SS			97722038	3,102
			DDA 7.5-16 FCM-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97722039	3,122
	12	10	DDA 12-10 FCM-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722116	2,488
			DDA 12-10 FCM-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97722117	2,603
			DDA 12-10 FCM-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722118	2,508
			DDA 12-10 FCM-PVC/E/C-F-32I002FG	PVC/EPDM/cer.	✓	✓	97722119	2,623
			DDA 12-10 FCM-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97722120	2,488
			DDA 12-10 FCM-PVC/V/C-F-31I002FG	PVC/viton/cer.		✓	97722121	2,603
			DDA 12-10 FCM-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97722122	2,508
			DDA 12-10 FCM-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97722124	2,603
			DDA 12-10 FCM-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97722126	2,623
			DDA 12-10 FCM-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722108	2,458
			DDA 12-10 FCM-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97722109	2,573
			DDA 12-10 FCM-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722110	2,478
			DDA 12-10 FCM-PP/V/C-F-31U2U2FG	PP/viton/cer.			97722112	2,458
			DDA 12-10 FCM-PP/V/C-F-31I002FG	PP/viton/cer.		✓	97722113	2,573
			DDA 12-10 FCM-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97722114	2,478
			DDA 12-10 FCM-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722128	2,586
			DDA 12-10 FCM-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722130	2,606
			DDA 12-10 FCM-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97722132	2,586
			DDA 12-10 FCM-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97722136	2,700
			DDA 12-10 FCM-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97722137	2,815
			DDA 12-10 FCM-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97722138	2,720
			DDA 12-10 FCM-SS/T/SS-F-31AAFG	SS/PTFE/SS			97722140	3,309
			DDA 12-10 FCM-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97722141	3,329

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-FCM

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-S FCM	17	7	DDA 17-7 FCM-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722218	2,488
			DDA 17-7 FCM-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97722219	2,603
			DDA 17-7 FCM-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722220	2,508
			DDA 17-7 FCM-PVC/E/C-F-32I002FG	PVC/EPDM/cer.	✓	✓	97722221	2,623
			DDA 17-7 FCM-PVC/V/C-F-31U2U2FG	PVC/EPDM/cer.			97722222	2,488
			DDA 17-7 FCM-PVC/V/C-F-31I002FG	PVC/EPDM/cer.		✓	97722223	2,603
			DDA 17-7 FCM-PVC/V/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722224	2,508
			DDA 17-7 FCM-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97722226	2,603
			DDA 17-7 FCM-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97722228	2,623
			DDA 17-7 FCM-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722210	2,458
			DDA 17-7 FCM-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97722211	2,573
			DDA 17-7 FCM-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722212	2,478
			DDA 17-7 FCM-PP/V/C-F-31U2U2FG	PP/EPDM/cer.			97722214	2,458
			DDA 17-7 FCM-PP/V/C-F-31I002FG	PP/EPDM/cer.		✓	97722215	2,573
			DDA 17-7 FCM-PP/V/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722216	2,478
			DDA 17-7 FCM-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722230	2,586
			DDA 17-7 FCM-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722232	2,606
			DDA 17-7 FCM-PV/V/C-F-31U2U2FG	PVDF/EPDM/cer.			97722234	2,586
			DDA 17-7 FCM-PV/V/C-F-31I002FG	PVDF/EPDM/cer.		✓	97722235	2,700
			DDA 17-7 FCM-PV/V/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722236	2,606
			DDA 17-7 FCM-PV/V/C-F-32I002FG	PVDF/EPDM/cer.	✓	✓	97722237	2,720
			DDA 17-7 FCM-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97722238	2,700
			DDA 17-7 FCM-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97722239	2,815
			DDA 17-7 FCM-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97722240	2,720
			DDA 17-7 FCM-PV/T/C-F-32I002FG	PVDF/PTFE/cer.	✓	✓	97722241	2,835
			DDA 17-7 FCM-PV/T/SS-F-32U2U2FG	PVDF/PTFE/SS	✓		99014920	2,804
			DDA 17-7 FCM-SS/T/SS-F-31AAFG	SS/PTFE/SS			97722242	3,309
			DDA 17-7 FCM-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97722243	3,329
	30	4	DDA 30-4 FCM-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722331	2,663
			DDA 30-4 FCM-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97722332	2,778
			DDA 30-4 FCM-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722333	2,683
			DDA 30-4 FCM-PVC/V/C-F-31U2U2FG	PVC/EPDM/cer.			97722335	2,663
			DDA 30-4 FCM-PVC/V/C-F-31I002FG	PVC/EPDM/cer.		✓	97722336	2,778
			DDA 30-4 FCM-PVC/V/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722337	2,683
			DDA 30-4 FCM-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97722339	2,778
			DDA 30-4 FCM-PVC/T/C-F-31I002FG	PVC/PTFE/cer.		✓	97722340	2,893
			DDA 30-4 FCM-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97722341	2,798
			DDA 30-4 FCM-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722313	2,633
			DDA 30-4 FCM-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97722314	2,748
			DDA 30-4 FCM-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722315	2,653
			DDA 30-4 FCM-PP/E/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97722316	2,768
			DDA 30-4 FCM-PP/V/C-F-31U2U2FG	PP/EPDM/cer.			97722317	2,633
			DDA 30-4 FCM-PP/V/C-F-31I002FG	PP/EPDM/cer.		✓	97722318	2,748
			DDA 30-4 FCM-PP/V/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722319	2,653
			DDA 30-4 FCM-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722343	2,760
			DDA 30-4 FCM-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722345	2,780
			DDA 30-4 FCM-PV/V/C-F-31U2U2FG	PVDF/EPDM/cer.			97722347	2,760
			DDA 30-4 FCM-PV/V/C-F-31I002FG	PVDF/EPDM/cer.		✓	97722348	2,875
			DDA 30-4 FCM-PV/V/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722349	2,780
			DDA 30-4 FCM-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97722351	2,875
			DDA 30-4 FCM-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97722352	2,990
			DDA 30-4 FCM-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97722353	2,895
			DDA 30-4 FCM-PV/T/C-F-32I002FG	PVDF/PTFE/cer.	✓	✓	97722354	3,010
			DDA 30-4 FCM-SS/T/SS-F-31AAFG	SS/PTFE/SS			97722355	3,484
			DDA 30-4 FCM-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97722356	3,504

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-FCM

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-XL FCM	60	10	DDA 60-10 FCM-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159377	3,464
			DDA 60-10 FCM-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99164198	3,506
			DDA 60-10 FCM-PVC/T/C-F-31U3U3FG	PVC/PTFE/cer.			99164185	3,548
			DDA 60-10 FCM-PVC/V/C-F-31U3U3FG	PVC/EPDM/cer.			99159378	3,464
			DDA 60-10 FCM-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159379	3,729
			DDA 60-10 FCM-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99164201	3,771
			DDA 60-10 FCM-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159380	3,813
			DDA 60-10 FCM-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99164202	3,855
			DDA 60-10 FCM-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159383	3,936
			DDA 60-10 FCM-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99164205	3,978
			DDA 60-10 FCM-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159382	3,852
			DDA 60-10 FCM-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99164204	3,894
	120	7	DDA 120-7 FCM-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159391	3,803
			DDA 120-7 FCM-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99164214	3,845
			DDA 120-7 FCM-PVC/V/C-F-31U3U3FG	PVC/viton/cer.			99159392	3,803
			DDA 120-7 FCM-PVC/V/C-F-32U3U3FG	PVC/viton/cer.	✓		99164215	3,845
			DDA 120-7 FCM-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159393	4,068
			DDA 120-7 FCM-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99164217	4,110
			DDA 120-7 FCM-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159394	4,152
			DDA 120-7 FCM-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99164218	4,194
			DDA 120-7 FCM-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159395	4,068
			DDA 120-7 FCM-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99164219	4,110
			DDA 120-7 FCM-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159397	4,275
			DDA 120-7 FCM-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99164221	4,317
			DDA 120-7 FCM-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159396	4,191
			DDA 120-7 FCM-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99164220	4,233
	200	4	DDA 200-4 FCM-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159405	3,981
			DDA 200-4 FCM-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99164230	4,023
			DDA 200-4 FCM-PVC/V/C-F-31U3U3FG	PVC/viton/cer.			99159406	3,981
			DDA 200-4 FCM-PVC/V/C-F-32U3U3FG	PVC/viton/cer.	✓		99164231	4,023
			DDA 200-4 FCM-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159407	4,246
			DDA 200-4 FCM-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99164233	4,288
			DDA 200-4 FCM-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159408	4,330
			DDA 200-4 FCM-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99164234	4,372
			DDA 200-4 FCM-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159409	4,246
			DDA 200-4 FCM-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99164235	4,288
			DDA 200-4 FCM-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159411	4,453
			DDA 200-4 FCM-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99164237	4,494
			DDA 200-4 FCM-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159410	4,369
			DDA 200-4 FCM-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99164236	4,411

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-FC

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-S FC	7.5	10	DDA 7.5-16 FC-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97721980	1,959
			DDA 7.5-16 FC-PVC/E/C-F-31I001FG	PVC/EPDM/cer.		✓	97721981	2,054
			DDA 7.5-16 FC-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721982	1,979
			DDA 7.5-16 FC-PVC/V/C-F-31U2U2FG	PVC/EPDM/cer.			97721984	1,959
			DDA 7.5-16 FC-PVC/V/C-F-31I001FG	PVC/EPDM/cer.		✓	97721985	2,054
			DDA 7.5-16 FC-PVC/V/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721986	1,979
			DDA 7.5-16 FC-PVC/T/C-F-31U2U2FG	PVC/EPDM/cer.			97721988	2,074
			DDA 7.5-16 FC-PVC/T/C-F-31I001FG	PVC/EPDM/cer.		✓	97721989	2,169
			DDA 7.5-16 FC-PVC/T/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721990	2,094
			DDA 7.5-16 FC-PVC/T/C-F-32I001FG	PVC/EPDM/cer.	✓	✓	97721991	2,189
		16	DDA 7.5-16 FC-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97721972	1,929
			DDA 7.5-16 FC-PP/E/C-F-31I001FG	PP/EPDM/cer.		✓	97721973	2,024
			DDA 7.5-16 FC-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721974	1,949
			DDA 7.5-16 FC-PP/V/C-F-31U2U2FG	PP/EPDM/cer.			97721976	1,929
			DDA 7.5-16 FC-PP/V/C-F-31I001FG	PP/EPDM/cer.		✓	97721977	2,024
			DDA 7.5-16 FC-PP/V/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721978	1,949
			DDA 7.5-16 FC-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97721992	2,057
			DDA 7.5-16 FC-PV/E/C-F-31I001FG	PVDF/EPDM/cer.		✓	97721993	2,151
			DDA 7.5-16 FC-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721994	2,077
			DDA 7.5-16 FC-PV/V/C-F-31U2U2FG	PVDF/EPDM/cer.			97721996	2,057
		12	DDA 7.5-16 FC-PV/V/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721998	2,077
			DDA 7.5-16 FC-PV/T/C-F-31U2U2FG	PVDF/EPDM/cer.			97722000	2,171
			DDA 7.5-16 FC-PV/T/C-F-31I001FG	PVDF/EPDM/cer.		✓	97722001	2,266
			DDA 7.5-16 FC-PV/T/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722002	2,191
			DDA 7.5-16 FC-PV/T/C-F-32I001FG	PVDF/EPDM/cer.	✓	✓	97722003	2,286
			DDA 7.5-16 FC-SS/T/SS-F-31AAG	SS/PTFE/SS			97722004	2,780
			DDA 7.5-16 FC-SS/T/SS-F-32AAG	SS/PTFE/SS	✓		97722005	2,800
			DDA 12-10 FC-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722082	2,166
			DDA 12-10 FC-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97722083	2,281
			DDA 12-10 FC-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722084	2,186
			DDA 12-10 FC-PVC/V/C-F-31U2U2FG	PVC/EPDM/cer.			97722086	2,166
			DDA 12-10 FC-PVC/V/C-F-31I002FG	PVC/EPDM/cer.		✓	97722087	2,281
			DDA 12-10 FC-PVC/V/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722088	2,186
			DDA 12-10 FC-PVC/T/C-F-31U2U2FG	PVC/EPDM/cer.			97722090	2,281
			DDA 12-10 FC-PVC/T/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722092	2,301
			DDA 12-10 FC-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722074	2,136
			DDA 12-10 FC-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97722075	2,251
			DDA 12-10 FC-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722076	2,156
			DDA 12-10 FC-PP/V/C-F-31U2U2FG	PP/EPDM/cer.			97722078	2,136
			DDA 12-10 FC-PP/V/C-F-31I002FG	PP/EPDM/cer.		✓	97722079	2,251
			DDA 12-10 FC-PP/V/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722080	2,156
			DDA 12-10 FC-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722094	2,264
			DDA 12-10 FC-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722096	2,284
			DDA 12-10 FC-PV/V/C-F-31U2U2FG	PVDF/EPDM/cer.			97722098	2,264
			DDA 12-10 FC-PV/V/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722100	2,284
			DDA 12-10 FC-PV/T/C-F-31U2U2FG	PVDF/EPDM/cer.			97722102	2,379
			DDA 12-10 FC-PV/T/C-F-31I002FG	PVDF/EPDM/cer.		✓	97722103	2,493
			DDA 12-10 FC-SS/T/SS-F-31AAG	SS/PTFE/SS			97722106	2,987
			DDA 12-10 FC-SS/T/SS-F-32AAG	SS/PTFE/SS	✓		97722107	3,007

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-FC

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-S FC	17	7	DDA 17-7 FC-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722184	2,166
			DDA 17-7 FC-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97722185	2,281
			DDA 17-7 FC-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97722188	2,166
			DDA 17-7 FC-PVC/V/C-F-31I002FG	PVC/viton/cer.		✓	97722189	2,281
			DDA 17-7 FC-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97722190	2,186
			DDA 17-7 FC-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97722192	2,281
			DDA 17-7 FC-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97722194	2,301
			DDA 17-7 FC-PVC/T/C-F-32I002FG	PVC/PTFE/cer.	✓	✓	97722195	2,416
			DDA 17-7 FC-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722176	2,136
			DDA 17-7 FC-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97722177	2,251
			DDA 17-7 FC-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722178	2,156
			DDA 17-7 FC-PP/V/C-F-31U2U2FG	PP/viton/cer.			97722180	2,136
			DDA 17-7 FC-PP/V/C-F-31I002FG	PP/viton/cer.		✓	97722181	2,251
			DDA 17-7 FC-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97722182	2,156
			DDA 17-7 FC-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722196	2,264
			DDA 17-7 FC-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722198	2,284
			DDA 17-7 FC-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97722200	2,264
			DDA 17-7 FC-PV/V/C-F-31I002FG	PVDF/viton/cer.		✓	97722201	2,379
			DDA 17-7 FC-PV/V/C-F-32U2U2FG	PVDF/viton/cer.	✓		97722202	2,284
			DDA 17-7 FC-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97722204	2,379
			DDA 17-7 FC-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97722205	2,493
			DDA 17-7 FC-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97722206	2,398
			DDA 17-7 FC-SS/T/SS-F-31AAFG	SS/PTFE/SS			97722208	2,987
			DDA 17-7 FC-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97722209	3,007
	30	4	DDA 30-4 FC-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722286	2,341
			DDA 30-4 FC-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97722288	2,456
			DDA 30-4 FC-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722289	2,361
			DDA 30-4 FC-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97722291	2,341
			DDA 30-4 FC-PVC/V/C-F-31I002FG	PVC/viton/cer.		✓	97722292	2,456
			DDA 30-4 FC-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97722293	2,361
			DDA 30-4 FC-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97722295	2,456
			DDA 30-4 FC-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97722297	2,476
			DDA 30-4 FC-PVC/T/C-F-32I002FG	PVC/PTFE/cer.	✓	✓	97722298	2,591
			DDA 30-4 FC-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722278	2,311
			DDA 30-4 FC-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97722279	2,426
			DDA 30-4 FC-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722280	2,331
			DDA 30-4 FC-PP/V/C-F-31U2U2FG	PP/viton/cer.			97722282	2,311
			DDA 30-4 FC-PP/V/C-F-31I002FG	PP/viton/cer.		✓	97722283	2,426
			DDA 30-4 FC-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97722284	2,331
			DDA 30-4 FC-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722299	2,438
			DDA 30-4 FC-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722301	2,458
			DDA 30-4 FC-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97722303	2,438
			DDA 30-4 FC-PV/V/C-F-31I002FG	PVDF/viton/cer.		✓	97722304	2,553
			DDA 30-4 FC-PV/V/C-F-32U2U2FG	PVDF/viton/cer.	✓		97722305	2,458
			DDA 30-4 FC-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97722307	2,553
			DDA 30-4 FC-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97722308	2,668
			DDA 30-4 FC-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97722309	2,573
			DDA 30-4 FC-SS/T/SS-F-31AAFG	SS/PTFE/SS			97722311	3,162
			DDA 30-4 FC-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97722312	3,182



## Pressure valves

Pressure valves provide a constant back pressure of 3 bar. They are particularly **required for SMART DDA-FC or DDA-FCM** pumps at very small flow rates. Pressure valves are installed either directly on the pump discharge side, or on the pressure relief valve. Loading pressure 3 bar, not adjustable. Maximum system pressure 16 bar. Spring material: Alloy C-4 (NiMo16CrTi, material number 2.4610). No connections included.

Max. flow rate [l/h]	Housing material	Ball	Material gasket	Product	£
60	PP	Ceramic	FKM	95730325	88
			EPDM	95730326	88
	PVC		FKM	95730327	88
			EPDM	95730328	88
	PVDF		PTFE	95730329	121
			FKM	95730330	135
			EPDM	95730331	135
			PTFE	95730332	169
	Stainless steel		Stainless steel	PTFE	95730333
200	PVC	Ceramic	FKM	99229033	193
			EPDM	99229021	193
	PVDF		FKM	99229020	344
			EPDM	99229018	344
	Stainless steel		Stainless steel	PTFE	99229034

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-AR

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-S AR	7.5	10	DDA 7.5-16 AR-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97721946	1,590
			DDA 7.5-16 AR-PVC/E/C-F-31I001FG	PVC/EPDM/cer.		✓	97721947	1,685
			DDA 7.5-16 AR-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721948	1,610
			DDA 7.5-16 AR-PVC/E/C-F-32I001FG	PVC/EPDM/cer.	✓	✓	97721949	1,705
			DDA 7.5-16 AR-PVC/V/C-F-31U2U2FG	PVC/EPDM/cer.			97721950	1,590
			DDA 7.5-16 AR-PVC/V/C-F-31I001FG	PVC/EPDM/cer.		✓	97721951	1,685
			DDA 7.5-16 AR-PVC/V/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721952	1,610
			DDA 7.5-16 AR-PVC/V/C-F-32I001FG	PVC/EPDM/cer.	✓	✓	97721953	1,705
			DDA 7.5-16 AR-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97721954	1,705
			DDA 7.5-16 AR-PVC/T/C-F-31I001FG	PVC/PTFE/cer.		✓	97721955	1,799
			DDA 7.5-16 AR-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97721956	1,725
			DDA 7.5-16 AR-PVC/T/C-F-32I001FG	PVC/PTFE/cer.	✓	✓	97721957	1,819
		16	DDA 7.5-16 AR-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97721938	1,560
			DDA 7.5-16 AR-PP/E/C-F-31I001FG	PP/EPDM/cer.		✓	97721939	1,655
			DDA 7.5-16 AR-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721940	1,580
			DDA 7.5-16 AR-PP/E/C-F-32I001FG	PP/EPDM/cer.	✓	✓	97721941	1,675
			DDA 7.5-16 AR-PP/V/C-F-31U2U2FG	PP/EPDM/cer.			97721942	1,560
			DDA 7.5-16 AR-PP/V/C-F-31I001FG	PP/EPDM/cer.		✓	97721943	1,655
			DDA 7.5-16 AR-PP/V/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721944	1,580
			DDA 7.5-16 AR-PP/V/C-F-32I001FG	PP/EPDM/cer.	✓	✓	97721945	1,675
			DDA 7.5-16 AR-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97721958	1,687
			DDA 7.5-16 AR-PV/E/C-F-31I001FG	PVDF/EPDM/cer.		✓	97721959	1,782
			DDA 7.5-16 AR-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721960	1,707
			DDA 7.5-16 AR-PV/E/C-F-32I001FG	PVDF/EPDM/cer.	✓	✓	97721961	1,802
			DDA 7.5-16 AR-PV/V/C-F-31U2U2FG	PVDF/EPDM/cer.			97721962	1,687
			DDA 7.5-16 AR-PV/V/C-F-31I001FG	PVDF/EPDM/cer.		✓	97721963	1,782
			DDA 7.5-16 AR-PV/V/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721964	1,707
			DDA 7.5-16 AR-PV/V/C-F-32I001FG	PVDF/EPDM/cer.	✓	✓	97721965	1,802
			DDA 7.5-16 AR-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97721966	1,802
			DDA 7.5-16 AR-PV/T/C-F-31I001FG	PVDF/PTFE/cer.		✓	97721967	1,897
			DDA 7.5-16 AR-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97721968	1,822
			DDA 7.5-16 AR-PV/T/C-F-32I001FG	PVDF/PTFE/cer.	✓	✓	97721969	1,917
			DDA 7.5-16 AR-SS/T/SS-F-31AAG	SS/PTFE/SS			97721970	2,411
			DDA 7.5-16 AR-SS/T/SS-F-32AAG	SS/PTFE/SS	✓		97721971	2,431
			DDA 7.5-16 AR-SS/V/SS-F-31AAG	SS/EPDM/SS			97948754	2,296
			DDA 7.5-16 AR-SS/E/SS-F-31AAG	SS/EPDM/SS			98872934	2,296
	12	10	DDA 12-10 AR-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722048	1,797
			DDA 12-10 AR-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97722049	1,912
			DDA 12-10 AR-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722050	1,817
			DDA 12-10 AR-PVC/V/C-F-31U2U2FG	PVC/EPDM/cer.			97722052	1,797
			DDA 12-10 AR-PVC/V/C-F-31I002FG	PVC/EPDM/cer.		✓	97722053	1,912
			DDA 12-10 AR-PVC/V/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722054	1,817
			DDA 12-10 AR-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97722056	1,912
			DDA 12-10 AR-PVC/T/C-F-31I002FG	PVC/PTFE/cer.		✓	97722057	2,027
			DDA 12-10 AR-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97722058	1,932
			DDA 12-10 AR-PVC/T/C-F-32I002FG	PVC/PTFE/cer.	✓	✓	97722059	2,047
			DDA 12-10 AR-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722040	1,767
			DDA 12-10 AR-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97722041	1,882
			DDA 12-10 AR-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722042	1,787
			DDA 12-10 AR-PP/E/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97722043	1,902
			DDA 12-10 AR-PP/V/C-F-31U2U2FG	PP/EPDM/cer.			97722044	1,767
			DDA 12-10 AR-PP/V/C-F-31I002FG	PP/EPDM/cer.		✓	97722045	1,882
			DDA 12-10 AR-PP/V/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722046	1,787
			DDA 12-10 AR-PP/V/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97722047	1,902
			DDA 12-10 AR-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722060	1,894

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-AR

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-S AR	12	10	DDA 12-10 AR-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722062	1,914
			DDA 12-10 AR-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97722064	1,894
			DDA 12-10 AR-PV/V/C-F-31I002FG	PVDF/viton/cer.		✓	97722065	2,009
			DDA 12-10 AR-PV/V/C-F-32U2U2FG	PVDF/viton/cer.	✓		97722066	1,914
			DDA 12-10 AR-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97722068	2,009
			DDA 12-10 AR-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97722069	2,124
			DDA 12-10 AR-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97722070	2,029
			DDA 12-10 AR-PV/T/C-F-32I002FG	PVDF/PTFE/cer.	✓	✓	97722071	2,144
			DDA 12-10 AR-SS/T/SS-F-31AAFG	SS/PTFE/SS			97722072	2,618
			DDA 12-10 AR-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97722073	2,638
	17	7	DDA 17-7 AR-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722150	1,797
			DDA 17-7 AR-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97722151	1,912
			DDA 17-7 AR-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722152	1,817
			DDA 17-7 AR-PVC/E/C-F-32I002FG	PVC/EPDM/cer.	✓	✓	97722153	1,932
			DDA 17-7 AR-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97722154	1,797
			DDA 17-7 AR-PVC/V/C-F-31I002FG	PVC/viton/cer.		✓	97722155	1,912
			DDA 17-7 AR-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97722156	1,817
			DDA 17-7 AR-PVC/V/C-F-32I002FG	PVC/viton/cer.	✓	✓	97722157	1,932
			DDA 17-7 AR-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97722158	1,912
			DDA 17-7 AR-PVC/T/C-F-31I002FG	PVC/PTFE/cer.		✓	97722159	2,027
			DDA 17-7 AR-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97722160	1,932
			DDA 17-7 AR-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722142	1,767
			DDA 17-7 AR-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97722143	1,882
			DDA 17-7 AR-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722144	1,787
			DDA 17-7 AR-PP/E/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97722145	1,902
			DDA 17-7 AR-PP/V/C-F-31U2U2FG	PP/viton/cer.			97722146	1,767
			DDA 17-7 AR-PP/V/C-F-31I002FG	PP/viton/cer.		✓	97722147	1,882
			DDA 17-7 AR-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97722148	1,787
			DDA 17-7 AR-PP/V/C-F-32I002FG	PP/viton/cer.	✓	✓	97722149	1,902
			DDA 17-7 AR-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722162	1,894
			DDA 17-7 AR-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722164	1,914
			DDA 17-7 AR-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97722170	2,009
			DDA 17-7 AR-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97722171	2,124
			DDA 17-7 AR-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97722172	2,029
			DDA 17-7 AR-PV/T/C-F-32I002FG	PVDF/PTFE/cer.	✓	✓	97722173	2,144
			DDA 17-7 AR-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97722166	1,894
			DDA 17-7 AR-PV/V/C-F-31I002FG	PVDF/viton/cer.		✓	97722167	2,009
			DDA 17-7 AR-PV/V/C-F-32U2U2FG	PVDF/viton/cer.	✓		97722168	1,914
			DDA 17-7 AR-PV/V/C-F-32I002FG	PVDF/viton/cer.	✓	✓	97722169	2,029
			DDA 17-7 AR-SS/T/SS-F-31AAFG	SS/PTFE/SS			97722174	2,618
			DDA 17-7 AR-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97722175	2,638
	30	4	DDA 30-4 AR-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97722252	1,972
			DDA 30-4 AR-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97722253	2,087
			DDA 30-4 AR-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97722254	1,992
			DDA 30-4 AR-PVC/E/C-F-32I002FG	PVC/EPDM/cer.	✓	✓	97722255	2,106
			DDA 30-4 AR-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97722256	1,974
			DDA 30-4 AR-PVC/V/C-F-31I002FG	PVC/viton/cer.		✓	97722257	2,087
			DDA 30-4 AR-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97722258	1,992
			DDA 30-4 AR-PVC/V/C-F-32I002FG	PVC/viton/cer.	✓	✓	97722259	2,106
			DDA 30-4 AR-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97722260	2,087
			DDA 30-4 AR-PVC/T/C-F-31I002FG	PVC/PTFE/cer.		✓	97722261	2,201
			DDA 30-4 AR-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97722262	2,106
			DDA 30-4 AR-PVC/T/C-F-32I002FG	PVC/PTFE/cer.	✓	✓	97722263	2,221
			DDA 30-4 AR-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97722244	1,942
			DDA 30-4 AR-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97722245	2,057

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-AR

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-S AR	30	4	DDA 30-4 AR-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97722246	1,962
			DDA 30-4 AR-PP/E/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97722247	2,077
			DDA 30-4 AR-PP/V/C-F-31U2U2FG	PP/viton/cer.			97722248	1,942
			DDA 30-4 AR-PP/V/C-F-31I002FG	PP/viton/cer.		✓	97722249	2,057
			DDA 30-4 AR-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97722250	1,962
			DDA 30-4 AR-PP/V/C-F-32I002FG	PP/viton/cer.	✓	✓	97722251	2,077
			DDA 30-4 AR-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97722264	2,069
			DDA 30-4 AR-PV/E/C-F-31I002FG	PVDF/EPDM/cer.		✓	97722265	2,184
			DDA 30-4 AR-PV/V/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97722266	2,089
			DDA 30-4 AR-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97722268	2,069
			DDA 30-4 AR-PV/V/C-F-31I002FG	PVDF/viton/cer.		✓	97722269	2,184
			DDA 30-4 AR-PV/V/C-F-32U2U2FG	PVDF/viton/cer.	✓		97722270	2,089
			DDA 30-4 AR-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97722272	2,184
			DDA 30-4 AR-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97722273	2,299
			DDA 30-4 AR-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97722274	2,204
			DDA 30-4 AR-PV/T/C-F-32I002FG	PVDF/PTFE/cer.	✓	✓	97722275	2,319
			DDA 30-4 AR-SS/T/SS-F-31A1FG	SS/PTFE/SS			97722276	2,793
			DDA 30-4 AR-SS/T/SS-F-32A1FG	SS/PTFE/SS	✓		97722277	2,813
DDA-XL AR	60	10	DDA 60-10 AR-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159370	2,521
			DDA 60-10 AR-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99164190	2,712
			DDA 60-10 AR-PVC/T/C-F-31U3U3FG	PVC/PTFE/cer.			99164184	2,754
			DDA 60-10 AR-PVC/T/C-F-32U3U3FG	PVC/PTFE/cer.	✓		99164192	2,796
			DDA 60-10 AR-PVC/V/C-F-31U3U3FG	PVC/viton/cer.			99159371	2,521
			DDA 60-10 AR-PVC/V/C-F-32U3U3FG	PVC/viton/cer.	✓		99164191	2,560
			DDA 60-10 AR-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159372	2,935
			DDA 60-10 AR-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99164193	2,977
			DDA 60-10 AR-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159373	3,019
			DDA 60-10 AR-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99164194	3,061
			DDA 60-10 AR-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159374	2,774
			DDA 60-10 AR-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99164195	2,977
			DDA 60-10 AR-SS/T/SS-F-31A1FG	SS/PTFE/SS			99159376	3,142
			DDA 60-10 AR-SS/T/SS-F-32A1FG	SS/PTFE/SS	✓		99164197	3,184
			DDA 60-10 AR-SS/V/SS-F-31A1FG	SS/viton/SS			99159375	3,058
			DDA 60-10 AR-SS/V/SS-F-32A1FG	SS/viton/SS	✓		99164196	3,100
	120	7	DDA 120-7 AR-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159384	2,840
			DDA 120-7 AR-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99164206	3,051
			DDA 120-7 AR-PVC/V/C-F-31U3U3FG	PVC/viton/cer.			99159385	2,840
			DDA 120-7 AR-PVC/V/C-F-32U3U3FG	PVC/viton/cer.	✓		99164207	3,051
			DDA 120-7 AR-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159386	3,274
			DDA 120-7 AR-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99164209	3,316
			DDA 120-7 AR-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159387	3,173
			DDA 120-7 AR-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99164210	3,400
			DDA 120-7 AR-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159388	3,093
			DDA 120-7 AR-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99164211	3,316
			DDA 120-7 AR-SS/T/SS-F-31A1FG	SS/PTFE/SS			99159390	3,481
			DDA 120-7 AR-SS/T/SS-F-32A1FG	SS/PTFE/SS	✓		99164213	3,523
			DDA 120-7 AR-SS/V/SS-F-31A1FG	SS/viton/SS			99159389	3,209
			DDA 120-7 AR-SS/V/SS-F-32A1FG	SS/viton/SS	✓		99164212	3,439
	200	4	DDA 200-4 AR-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159398	3,009
			DDA 200-4 AR-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99164222	3,229
			DDA 200-4 AR-PVC/V/C-F-31U3U3FG	PVC/viton/cer.			99159399	3,009
			DDA 200-4 AR-PVC/V/C-F-32U3U3FG	PVC/viton/cer.	✓		99164223	3,229
			DDA 200-4 AR-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159400	3,452
			DDA 200-4 AR-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99164225	3,494
			DDA 200-4 AR-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159401	3,342

## CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-AR

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-XL AR	200	4	DDA 200-4 AR-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99164226	3,578
			DDA 200-4 AR-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159402	3,260
			DDA 200-4 AR-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99164227	3,494
			DDA 200-4 AR-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159404	3,458
			DDA 200-4 AR-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99164229	3,701
			DDA 200-4 AR-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159403	3,575
			DDA 200-4 AR-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99164228	3,617

## CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDA-AR with DIAPHRAGM LEAKAGE DETECTION

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-XL AR/L	60	10	DDA 60-10 AR-PVC-L/E/C-F-31U3U3FG	PVC L/EPDM/cer.			99159496	3,112
			DDA 60-10 AR-PVC-L/E/C-F-32U3U3FG	PVC L/EPDM/cer.	✓		99266309	3,154
			DDA 60-10 AR-PVC-L/T/C-F-31U3U3FG	PVC L/PTFE/cer.			99317856	3,195
			DDA 60-10 AR-PVC-L/V/C-F-31U3U3FG	PVC L/viton/cer.			99159497	3,112
			DDA 60-10 AR-PVC-L/V/C-F-32U3U3FG	PVC L/viton/cer.	✓		99266413	3,154
			DDA 60-10 AR-PV-L/T/C-F-31U3U3FG	PV L/PTFE/cer.			99159498	3,461
			DDA 60-10 AR-PV-L/T/C-F-32U3U3FG	PV L/PTFE/cer.	✓		99266415	3,503
			DDA 60-10 AR-PV-L/V/C-F-31U3U3FG	PV L/viton/cer.			99159499	3,377
			DDA 60-10 AR-PV-L/V/C-F-32U3U3FG	PV L/viton/cer.	✓		99266416	3,419
			DDA 60-10 AR-SS-L/T/SS-F-31A1A1FG	SS L/PTFE/SS			99159501	3,583
			DDA 60-10 AR-SS-L/T/SS-F-32A1A1FG	SS L/PTFE/SS	✓		99266419	3,625
			DDA 60-10 AR-SS-L/V/SS-F-31A1A1FG	SS L/viton/SS			99159500	3,499
			DDA 60-10 AR-SS-L/V/SS-F-32A1A1FG	SS L/viton/SS	✓		99266418	3,541
	120	7	DDA 120-7 AR-PVC-L/E/C-F-31U3U3FG	PVC L/EPDM/cer.			99159502	3,451
			DDA 120-7 AR-PVC-L/E/C-F-32U3U3FG	PVC L/EPDM/cer.	✓		99266421	3,493
			DDA 120-7 AR-PVC-L/V/C-F-31U3U3FG	PVC L/viton/cer.			99159503	3,451
			DDA 120-7 AR-PVC-L/V/C-F-32U3U3FG	PVC L/viton/cer.	✓		99266422	3,493
			DDA 120-7 AR-PV-L/T/C-F-31U3U3FG	PV L/PTFE/cer.			99159504	3,800
			DDA 120-7 AR-PV-L/T/C-F-32U3U3FG	PV L/PTFE/cer.	✓		99266433	3,842
			DDA 120-7 AR-PV-L/V/C-F-31U3U3FG	PV L/viton/cer.			99159505	3,716
			DDA 120-7 AR-PV-L/V/C-F-32U3U3FG	PV L/viton/cer.	✓		99266456	3,758
			DDA 120-7 AR-SS-L/T/SS-F-31A1A1FG	SS L/PTFE/SS			99159507	3,922
			DDA 120-7 AR-SS-L/T/SS-F-32A1A1FG	SS L/PTFE/SS	✓		99266437	3,964
			DDA 120-7 AR-SS-L/V/SS-F-31A1A1FG	SS L/viton/SS			99159506	3,838
			DDA 120-7 AR-SS-L/V/SS-F-32A1A1FG	SS L/viton/SS	✓		99266436	3,880
	200	4	DDA 200-4 AR-PVC-L/E/C-F-31U3U3FG	PVC L/EPDM/cer.			99159508	3,628
			DDA 200-4 AR-PVC-L/E/C-F-32U3U3FG	PVC L/EPDM/cer.	✓		99266457	3,670
			DDA 200-4 AR-PVC-L/V/C-F-31U3U3FG	PVC L/viton/cer.			99159509	3,628
			DDA 200-4 AR-PVC-L/V/C-F-32U3U3FG	PVC L/viton/cer.	✓		99266458	3,670
			DDA 200-4 AR-PV-L/T/C-F-31U3U3FG	PV L/PTFE/cer.			99159510	3,978
			DDA 200-4 AR-PV-L/T/C-F-32U3U3FG	PV L/PTFE/cer.	✓		99266460	4,020
			DDA 200-4 AR-PV-L/V/C-F-31U3U3FG	PV L/viton/cer.			99159511	3,894
			DDA 200-4 AR-PV-L/V/C-F-32U3U3FG	PV L/viton/cer.	✓		99266462	3,936
			DDA 200-4 AR-SS-L/T/SS-F-31A1A1FG	SS L/PTFE/SS			99159513	4,100
			DDA 200-4 AR-SS-L/T/SS-F-32A1A1FG	SS L/PTFE/SS	✓		99266483	4,142
			DDA 200-4 AR-SS-L/V/SS-F-31A1A1FG	SS L/viton/SS			99159512	4,016
			DDA 200-4 AR-SS-L/V/SS-F-32A1A1FG	SS L/viton/SS	✓		99266484	4,058

## E-Box - SMART Digital - S

The E-box can be fitted (added or retrofitted) to a SMART DDA-S dosing pump after installation (software version 2.5)  
Suitable for harsh environments due to IP65 enclosures and cable inputs.

### Supported dosing pumps:

SMART Digital-S dosing pumps DDA 7.5, DDA 12, DDA 17 and DDA 30 control variants FCM, FC or AR

### Advantages:

- Remote monitoring and setup of SMART Digital DDA dosing pumps
- Better input signal = higher accurate dosing flow adjustment
- Plain text error messages using the Flow Control System (FC and FCM version)
- Compact design through clickable E-Box, retrofittable



DDA-S dosing pump with E-

## CIU External controller - SMART Digital - S & XL

External CIU 900 box requires power supply and connection cable between controller and dosing pump.

The CIU 900 box can be fitted (added or retrofitted) to a SMART Digital S or XL dosing pump after installation (software version 2.5)

Additional CIM required for different protocol, see below

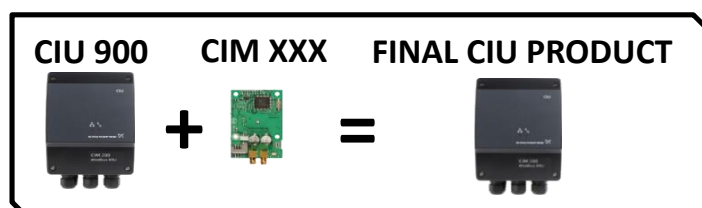


CIU 900 external controller and CIM interface card

## E-Box - For Use With SMART Digital-S dosing pumps DDA 7.5, DDA 12, DDA 17 and DDA 30

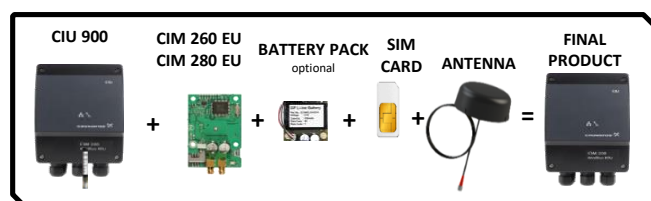
Description	Product number	£
E-Box 150 Profibus DP-V0	97513994	484
E-Box 200 Modbus RTU	98563350	484
E-Box 500 PROFINET IO or Modbus TCP	99171932	484

## CIM/CIU - For Use With all SMART Digital DDA dosing pumps



Description	Product number	£
CIU 900	99448387	227
CIM 150 Profibus DP-V0	96824793	251
CIM 200 Modbus RTU/COMLI	96824796	229
CIM 500 Profinet/Modbus TCP/Ethernet IP	98301408	517
CIU cable Genibus connection cable 3 m, M12 straight connector - necessary for all CIU controllers	98589048	67
PC-Tool PC-Tool link USB including cables	96705378	1,230

## Selection Example for GSM or Grundfos Remote Management



### Model

2G/3G/4G Roof Antenna	99518079	108
Battery Pack <sup>1)</sup>	99499908	37

<sup>1)</sup> CIM 260 and CIM280 can accommodate a rechargeable battery to allow the CIM card to transmit in the event of power failure.

<sup>2)</sup> SIM supply optional. Please contact Grundfos.

NOTE - All the above list prices are subject to Category 4 discount terms

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDC-AR

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDC-S AR	6	10	DDC 6-10 AR-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97721366	1,211
			DDC 6-10 AR-PVC/E/C-F-31I001FG	PVC/EPDM/cer.		✓	97721367	1,315
			DDC 6-10 AR-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721368	1,233
			DDC 6-10 AR-PVC/E/C-F-32I001FG	PVC/EPDM/cer.	✓	✓	97721369	1,337
			DDC 6-10 AR-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97721374	1,337
			DDC 6-10 AR-PVC/T/C-F-31I001FG	PVC/PTFE/cer.		✓	97721376	1,440
			DDC 6-10 AR-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97721377	1,358
			DDC 6-10 AR-PVC/T/C-F-32I001FG	PVC/PTFE/cer.	✓	✓	97721378	1,462
			DDC 6-10 AR-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97721370	1,211
			DDC 6-10 AR-PVC/V/C-F-31I001FG	PVC/viton/cer.		✓	97721371	1,315
			DDC 6-10 AR-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97721372	1,233
			DDC 6-10 AR-PVC/V/C-F-32I001FG	PVC/viton/cer.	✓	✓	97721373	1,337
			DDC 6-10 AR-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97721358	1,179
			DDC 6-10 AR-PP/E/C-F-31I001FG	PP/EPDM/cer.		✓	97721359	1,282
			DDC 6-10 AR-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721360	1,200
			DDC 6-10 AR-PP/E/C-F-32I001FG	PP/EPDM/cer.	✓	✓	97721361	1,304
			DDC 6-10 AR-PP/V/C-F-31U2U2FG	PP/viton/cer.			97721362	1,179
			DDC 6-10 AR-PP/V/C-F-31I001FG	PP/viton/cer.		✓	97721363	1,282
			DDC 6-10 AR-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97721364	1,200
			DDC 6-10 AR-PP/V/C-F-32I001FG	PP/viton/cer.	✓	✓	97721365	1,304
			DDC 6-10 AR-PP/V/SS-F-31U2U2FG	PP/viton/SS			97947823	1,179
			DDC 6-10 AR-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97721379	1,317
			DDC 6-10 AR-PV/E/C-F-31I001FG	PVDF/EPDM/cer.		✓	97721380	1,421
			DDC 6-10 AR-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721381	1,339
			DDC 6-10 AR-PV/E/C-F-32I001FG	PVDF/EPDM/cer.	✓	✓	97721382	1,443
			DDC 6-10 AR-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97721387	1,443
			DDC 6-10 AR-PV/T/C-F-31I001FG	PVDF/PTFE/cer.		✓	97721388	1,546
			DDC 6-10 AR-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97721389	1,464
			DDC 6-10 AR-PV/T/C-F-32I001FG	PVDF/PTFE/cer.	✓	✓	97721390	1,568
			DDC 6-10 AR-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97721383	1,317
			DDC 6-10 AR-PV/V/C-F-31I001FG	PVDF/viton/cer.		✓	97721384	1,421
			DDC 6-10 AR-PV/V/C-F-32U2U2FG	PVDF/viton/cer.	✓		97721385	1,339
			DDC 6-10 AR-PV/V/C-F-32I001FG	PVDF/viton/cer.	✓	✓	97721386	1,443
			DDC 6-10 AR-SS/T/SS-F-31AAG	SS/PTFE/SS			97721391	2,107
			DDC 6-10 AR-SS/T/SS-F-32AAG	SS/PTFE/SS	✓		97721392	2,129
	9	7	DDC 9-7 AR-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97721435	1,211
			DDC 9-7 AR-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97721436	1,337
			DDC 9-7 AR-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721437	1,233
			DDC 9-7 AR-PVC/E/C-F-32I002FG	PVC/EPDM/cer.	✓	✓	97721438	1,358
			DDC 9-7 AR-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97721443	1,337
			DDC 9-7 AR-PVC/T/C-F-31I002FG	PVC/PTFE/cer.		✓	97721444	1,462
			DDC 9-7 AR-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97721445	1,358
			DDC 9-7 AR-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97721439	1,211
			DDC 9-7 AR-PVC/V/C-F-31I002FG	PVC/viton/cer.		✓	97721440	1,337
			DDC 9-7 AR-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97721441	1,233
			DDC 9-7 AR-PVC/V/C-F-32I002FG	PVC/viton/cer.	✓	✓	97721442	1,358
			DDC 9-7 AR-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97721427	1,179
			DDC 9-7 AR-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97721428	1,304
			DDC 9-7 AR-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721429	1,200
			DDC 9-7 AR-PP/E/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97721430	1,326
			DDC 9-7 AR-PP/V/C-F-31U2U2FG	PP/viton/cer.			97721431	1,179
			DDC 9-7 AR-PP/V/C-F-31I002FG	PP/viton/cer.		✓	97721432	1,304
			DDC 9-7 AR-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97721433	1,200
			DDC 9-7 AR-PP/V/C-F-32I002FG	PP/viton/cer.	✓	✓	97721434	1,326
			DDC 9-7 AR-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97721447	1,317
			DDC 9-7 AR-PV/E/C-F-31I002FG	PVDF/EPDM/cer.		✓	97721448	1,443
			DDC 9-7 AR-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721449	1,339
			DDC 9-7 AR-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97721455	1,443

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDC-AR

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDA-S AR	15	4	DDC 9-7 AR-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97721456	1,568
			DDC 9-7 AR-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97721457	1,464
			DDC 9-7 AR-PV/T/C-F-32I002FG	PVDF/PTFE/cer.	✓	✓	97721458	1,590
			DDC 9-7 AR-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97721451	1,317
			DDC 9-7 AR-PV/V/C-F-31I002FG	PVDF/viton/cer.		✓	97721452	1,443
			DDC 9-7 AR-PV/V/C-F-32U2U2FG	PVDF/viton/cer.	✓		97721453	1,339
			DDC 9-7 AR-SS/T/SS-F-31AAFG	SS/PTFE/SS			97721459	2,107
			DDC 9-7 AR-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97721460	2,129
			DDC 15-4 AR-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97721503	1,413
			DDC 15-4 AR-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97721504	1,538
			DDC 15-4 AR-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721505	1,435
			DDC 15-4 AR-PVC/E/C-F-32I002FG	PVC/EPDM/cer.	✓	✓	97721506	1,560
			DDC 15-4 AR-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97721511	1,538
			DDC 15-4 AR-PVC/T/C-F-31I002FG	PVC/PTFE/cer.		✓	97721512	1,663
			DDC 15-4 AR-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97721513	1,560
			DDC 15-4 AR-PVC/T/C-F-32I002FG	PVC/PTFE/cer.	✓	✓	97721514	1,685
			DDC 15-4 AR-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97721507	1,413
			DDC 15-4 AR-PVC/V/C-F-31I002FG	PVC/viton/cer.		✓	97721508	1,538
			DDC 15-4 AR-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97721509	1,435
			DDC 15-4 AR-PVC/V/C-F-32I002FG	PVC/viton/cer.	✓	✓	97721510	1,560
			DDC 15-4 AR-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97721495	1,380
			DDC 15-4 AR-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97721496	1,505
			DDC 15-4 AR-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721497	1,402
			DDC 15-4 AR-PP/E/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97721498	1,527
			DDC 15-4 AR-PP/V/C-F-31U2U2FG	PP/viton/cer.			97721499	1,380
			DDC 15-4 AR-PP/V/C-F-31I002FG	PP/viton/cer.		✓	97721500	1,505
			DDC 15-4 AR-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97721501	1,402
			DDC 15-4 AR-PP/V/C-F-32I002FG	PP/viton/cer.	✓	✓	97721502	1,527
			DDC 15-4 AR-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97721515	1,519
			DDC 15-4 AR-PV/E/C-F-31I002FG	PVDF/EPDM/cer.		✓	97721516	1,644
			DDC 15-4 AR-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721517	1,541
			DDC 15-4 AR-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97721523	1,644
			DDC 15-4 AR-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97721524	1,769
			DDC 15-4 AR-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97721525	1,666
			DDC 15-4 AR-PV/T/C-F-32I002FG	PVDF/PTFE/cer.	✓	✓	97721526	1,791
			DDC 15-4 AR-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97721519	1,519
			DDC 15-4 AR-PV/V/C-F-31I002FG	PVDF/viton/cer.		✓	97721520	1,644
			DDC 15-4 AR-SS/T/SS-F-31AAFG	SS/PTFE/SS			97721527	2,308
			DDC 15-4 AR-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97721528	2,330



# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDC-A

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDC-S A	6	10	DDC 6-10 A-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97721332	953
			DDC 6-10 A-PVC/E/C-F-31I001FG	PVC/EPDM/cer.		✓	97721333	1,056
			DDC 6-10 A-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721334	974
			DDC 6-10 A-PVC/E/C-F-32I001FG	PVC/EPDM/cer.	✓	✓	97721335	1,078
			DDC 6-10 A-PVC/V/C-F-31U2U2FG	PVC/EPDM/cer.			97721336	953
			DDC 6-10 A-PVC/V/C-F-31I001FG	PVC/EPDM/cer.		✓	97721337	1,056
			DDC 6-10 A-PVC/V/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721338	974
			DDC 6-10 A-PVC/V/C-F-32I001FG	PVC/EPDM/cer.	✓	✓	97721339	1,078
			DDC 6-10 A-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97721340	1,078
			DDC 6-10 A-PVC/T/C-F-31I001FG	PVC/PTFE/cer.		✓	97721341	1,181
			DDC 6-10 A-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97721342	1,100
			DDC 6-10 A-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97721324	920
			DDC 6-10 A-PP/E/C-F-31I001FG	PP/EPDM/cer.		✓	97721325	1,023
			DDC 6-10 A-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721326	942
			DDC 6-10 A-PP/E/C-F-32I001FG	PP/EPDM/cer.	✓	✓	97721327	1,045
			DDC 6-10 A-PP/V/C-F-31U2U2FG	PP/EPDM/cer.			97721328	920
			DDC 6-10 A-PP/V/C-F-31I001FG	PP/EPDM/cer.		✓	97721329	1,023
			DDC 6-10 A-PP/V/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721330	942
			DDC 6-10 A-PP/V/C-F-32I001FG	PP/EPDM/cer.	✓	✓	97721331	1,045
			DDC 6-10 A-PV/E/C-F-31U2U2FG	PVDF/EPDM/cer.			97721344	1,059
			DDC 6-10 A-PV/E/C-F-31I001FG	PVDF/EPDM/cer.		✓	97721345	1,162
			DDC 6-10 A-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721346	1,081
			DDC 6-10 A-PV/E/C-F-32I001FG	PVDF/EPDM/cer.	✓	✓	97721347	1,184
			DDC 6-10 A-PV/V/C-F-31U2U2FG	PVDF/EPDM/cer.			97721348	1,059
			DDC 6-10 A-PV/V/C-F-31I001FG	PVDF/EPDM/cer.		✓	97721349	1,162
			DDC 6-10 A-PV/V/C-F-32U2U2FG	PVDF/EPDM/cer.	✓	✓	97721351	1,184
			DDC 6-10 A-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97721352	1,184
			DDC 6-10 A-PV/T/C-F-31I001FG	PVDF/PTFE/cer.		✓	97721353	1,288
			DDC 6-10 A-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97721354	1,206
			DDC 6-10 A-PV/T/C-F-32I001FG	PVDF/PTFE/cer.	✓	✓	97721355	1,309
			DDC 6-10 A-SS/T/SS-F-31AAFG	SS/PTFE/SS			97721356	1,848
			DDC 6-10 A-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97721357	1,870
	9	7	DDC 9-7 A-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97721401	953
			DDC 9-7 A-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97721402	1,078
			DDC 9-7 A-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721403	974
			DDC 9-7 A-PVC/V/C-F-31U2U2FG	PVC/EPDM/cer.			97721405	953
			DDC 9-7 A-PVC/V/C-F-31I002FG	PVC/EPDM/cer.		✓	97721406	1,078
			DDC 9-7 A-PVC/V/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721407	974
			DDC 9-7 A-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97721409	1,078
			DDC 9-7 A-PVC/T/C-F-31I002FG	PVC/PTFE/cer.		✓	97721410	1,203
			DDC 9-7 A-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97721411	1,100
			DDC 9-7 A-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97721393	920
			DDC 9-7 A-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97721394	1,045
			DDC 9-7 A-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721395	942
			DDC 9-7 A-PP/E/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97721396	1,067
			DDC 9-7 A-PP/V/C-F-31U2U2FG	PP/EPDM/cer.			97721397	920
			DDC 9-7 A-PP/V/C-F-31I002FG	PP/EPDM/cer.		✓	97721398	1,045
			DDC 9-7 A-PP/V/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721399	942
			DDC 9-7 A-PP/V/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97721400	1,067
			DDC 9-7 A-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721415	1,081
			DDC 9-7 A-PV/V/C-F-31U2U2FG	PVDF/EPDM/cer.			97721417	1,059
			DDC 9-7 A-PV/V/C-F-31I002FG	PVDF/EPDM/cer.		✓	97721418	1,184
			DDC 9-7 A-PV/V/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721419	1,081
			DDC 9-7 A-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97721421	1,184
			DDC 9-7 A-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97721422	1,309
			DDC 9-7 A-PV/T/C-F-32U2U2FG	PVDF/PTFE/cer.	✓		97721423	1,206
			DDC 9-7 A-SS/T/SS-F-31AAFG	SS/PTFE/SS			97721425	1,848
			DDC 9-7 A-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97721426	1,870

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDC-A

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDC-S A	15	4	DDC 15-4 A-PVC/E/C-F-31U2U2FG	PVC/EPDM/cer.			97721469	1,154
			DDC 15-4 A-PVC/E/C-F-31I002FG	PVC/EPDM/cer.		✓	97721470	1,279
			DDC 15-4 A-PVC/E/C-F-32U2U2FG	PVC/EPDM/cer.	✓		97721471	1,176
			DDC 15-4 A-PVC/V/C-F-31U2U2FG	PVC/viton/cer.			97721473	1,154
			DDC 15-4 A-PVC/V/C-F-31I002FG	PVC/viton/cer.		✓	97721474	1,279
			DDC 15-4 A-PVC/V/C-F-32U2U2FG	PVC/viton/cer.	✓		97721475	1,176
			DDC 15-4 A-PVC/V/C-F-32I002FG	PVC/viton/cer.	✓	✓	97721476	1,301
			DDC 15-4 A-PVC/T/C-F-31U2U2FG	PVC/PTFE/cer.			97721477	1,279
			DDC 15-4 A-PVC/T/C-F-31I002FG	PVC/PTFE/cer.		✓	97721478	1,405
			DDC 15-4 A-PVC/T/C-F-32U2U2FG	PVC/PTFE/cer.	✓		97721479	1,301
			DDC 15-4 A-PP/E/C-F-31U2U2FG	PP/EPDM/cer.			97721461	1,121
			DDC 15-4 A-PP/E/C-F-31I002FG	PP/EPDM/cer.		✓	97721462	1,247
			DDC 15-4 A-PP/E/C-F-32U2U2FG	PP/EPDM/cer.	✓		97721463	1,143
			DDC 15-4 A-PP/E/C-F-32I002FG	PP/EPDM/cer.	✓	✓	97721464	1,268
			DDC 15-4 A-PP/V/C-F-31U2U2FG	PP/viton/cer.			97721465	1,121
			DDC 15-4 A-PP/V/C-F-31I002FG	PP/viton/cer.		✓	97721466	1,247
			DDC 15-4 A-PP/V/C-F-32U2U2FG	PP/viton/cer.	✓		97721467	1,143
			DDC 15-4 A-PP/V/C-F-32I002FG	PP/viton/cer.	✓	✓	97721468	1,268
			DDC 15-4 A-PV/E/C-F-32U2U2FG	PVDF/EPDM/cer.	✓		97721483	1,282
			DDC 15-4 A-PV/V/C-F-31U2U2FG	PVDF/viton/cer.			97721485	1,260
			DDC 15-4 A-PV/T/C-F-31U2U2FG	PVDF/PTFE/cer.			97721489	1,386
			DDC 15-4 A-PV/T/C-F-31I002FG	PVDF/PTFE/cer.		✓	97721490	1,511
			DDC 15-4 A-SS/T/SS-F-31AAFG	SS/PTFE/SS			97721493	2,050
			DDC 15-4 A-SS/T/SS-F-32AAFG	SS/PTFE/SS	✓		97721494	2,071

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDE-AR

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDE-XL AR	60	10	DDE 60-10 AR-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159335	2,308
			DDE 60-10 AR-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99262900	2,354
			DDE 60-10 AR-PVC/V/C-F-31U3U3FG	PVC/EPDM/cer.			99159336	2,308
			DDE 60-10 AR-PVC/V/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99262854	2,354
			DDE 60-10 AR-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159337	2,594
			DDE 60-10 AR-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99266532	2,639
			DDE 60-10 AR-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159338	2,684
			DDE 60-10 AR-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99266543	2,729
			DDE 60-10 AR-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159339	2,594
			DDE 60-10 AR-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99266547	2,639
			DDE 60-10 AR-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159341	2,816
			DDE 60-10 AR-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99266819	2,861
			DDE 60-10 AR-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159340	2,726
			DDE 60-10 AR-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99266846	2,771
	120	7	DDE 120-7 AR-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159349	2,659
			DDE 120-7 AR-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99266851	2,704
			DDE 120-7 AR-PVC/V/C-F-31U3U3FG	PVC/EPDM/cer.			99159350	2,659
			DDE 120-7 AR-PVC/V/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99266852	2,704
			DDE 120-7 AR-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159351	2,944
			DDE 120-7 AR-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99266856	2,989
			DDE 120-7 AR-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159352	3,034
			DDE 120-7 AR-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99266862	3,080
			DDE 120-7 AR-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159353	2,944
			DDE 120-7 AR-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99266867	2,989
			DDE 120-7 AR-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159355	3,166
			DDE 120-7 AR-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99266869	3,211
			DDE 120-7 AR-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159354	3,076
			DDE 120-7 AR-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99266924	3,121
	200	4	DDE 200-4 AR-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159363	2,843
			DDE 200-4 AR-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99266902	2,888
			DDE 200-4 AR-PVC/V/C-F-31U3U3FG	PVC/EPDM/cer.			99159364	2,843
			DDE 200-4 AR-PVC/V/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99266903	2,888
			DDE 200-4 AR-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159365	3,128
			DDE 200-4 AR-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99266909	3,174
			DDE 200-4 AR-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159366	3,219
			DDE 200-4 AR-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99266904	3,264
			DDE 200-4 AR-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159367	3,128
			DDE 200-4 AR-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99266906	3,174
			DDE 200-4 AR-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159369	3,351
			DDE 200-4 AR-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99266911	3,396
			DDE 200-4 AR-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159368	3,260
			DDE 200-4 AR-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99266926	3,305

**CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDE-PR**

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDE-S PR	6	10	DDE 6-10 PR-PVC/E/C-X-31U2U2FG	PVC/EPDM/cer.			98147268	660
			DDE 6-10 PR-PVC/E/C-X-31I001FG	PVC/EPDM/cer.		✓	98147269	757
			DDE 6-10 PR-PVC/E/C-X-32U2U2FG	PVC/EPDM/cer.	✓		98147270	680
			DDE 6-10 PR-PVC/E/C-X-32I001FG	PVC/EPDM/cer.	✓	✓	98147271	777
			DDE 6-10 PR-PVC/T/C-X-31U2U2FG	PVC/PTFE/cer.			98147276	777
			DDE 6-10 PR-PVC/V/C-X-31U2U2FG	PVC/viton/cer.			98147272	660
			DDE 6-10 PR-PVC/V/C-X-31I001FG	PVC/viton/cer.		✓	98147273	757
			DDE 6-10 PR-PVC/V/C-X-32U2U2FG	PVC/viton/cer.	✓		98147274	680
			DDE 6-10 PR-PVC/V/C-X-32I001FG	PVC/viton/cer.	✓	✓	98147275	777
			DDE 6-10 PR-PP/E/C-X-31U2U2FG	PP/EPDM/cer.			98147240	630
			DDE 6-10 PR-PP/E/C-X-31I001FG	PP/EPDM/cer.		✓	98147261	726
			DDE 6-10 PR-PP/E/C-X-32U2U2FG	PP/EPDM/cer.	✓		98147262	650
			DDE 6-10 PR-PP/V/C-X-31U2U2FG	PP/viton/cer.			98147264	630
			DDE 6-10 PR-PP/V/C-X-31I001FG	PP/viton/cer.		✓	98147265	726
			DDE 6-10 PR-PP/V/C-X-32U2U2FG	PP/viton/cer.	✓		98147266	650
			DDE 6-10 PR-PV/T/C-X-31U2U2FG	PVDF/PTFE/cer.			98147288	876
			DDE 6-10 PR-PV/T/C-X-31I001FG	PVDF/PTFE/cer.		✓	98147289	972
			DDE 6-10 PR-PV/T/C-X-32U2U2FG	PVDF/PTFE/cer.	✓		98147290	896
			DDE 6-10 PR-PV/V/C-X-31U2U2FG	PVDF/viton/cer.			98147284	759
			DDE 6-10 PR-SS/T/SS-X-31AAFG	SS/PTFE/SS			98147292	1,495
	15	4	DDE 15-4 PR-PVC/E/C-X-31U2U2FG	PVC/EPDM/cer.			98147302	840
			DDE 15-4 PR-PVC/E/C-X-31I002FG	PVC/EPDM/cer.		✓	98147303	957
			DDE 15-4 PR-PVC/E/C-X-32I002FG	PVC/EPDM/cer.	✓	✓	98147305	977
			DDE 15-4 PR-PVC/V/C-X-31U2U2FG	PVC/viton/cer.			98147306	840
			DDE 15-4 PR-PVC/V/C-X-31I002FG	PVC/viton/cer.		✓	98147307	957
			DDE 15-4 PR-PVC/V/C-X-32U2U2FG	PVC/viton/cer.	✓		98147308	861
			DDE 15-4 PR-PVC/V/C-X-32I002FG	PVC/viton/cer.	✓	✓	98147309	977
			DDE 15-4 PR-PP/E/C-X-31U2U2FG	PP/EPDM/cer.			98147294	810
			DDE 15-4 PR-PP/E/C-X-31I002FG	PP/EPDM/cer.		✓	98147295	927
			DDE 15-4 PR-PP/E/C-X-32U2U2FG	PP/EPDM/cer.	✓		98147296	830
			DDE 15-4 PR-PP/V/C-X-31U2U2FG	PP/viton/cer.			98147298	810
			DDE 15-4 PR-PP/V/C-X-31I002FG	PP/viton/cer.		✓	98147299	927
			DDE 15-4 PR-PP/V/C-X-32U2U2FG	PP/viton/cer.	✓		98147300	830
			DDE 15-4 PR-PV/V/C-X-31U2U2FG	PVDF/viton/cer.			98147318	939
			DDE 15-4 PR-PV/T/C-X-31U2U2FG	PVDF/PTFE/cer.			98147322	1,056
			DDE 15-4 PR-PV/T/C-X-31I002FG	PVDF/PTFE/cer.		✓	98147323	1,173
			DDE 15-4 PR-PV/T/C-X-32U2U2FG	PVDF/PTFE/cer.	✓		98147324	1,076
			DDE 15-4 PR-SS/T/SS-X-31AAFG	SS/PTFE/SS			98147326	1,676

**CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDE-P**

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDE-S P	6	10	DDE 6-10 P-PVC/E/C-X-31U2U2FG	PVC/EPDM/cer.			97720957	592
			DDE 6-10 P-PVC/E/C-X-31I001FG	PVC/EPDM/cer.		✓	97720958	688
			DDE 6-10 P-PVC/E/C-X-32U2U2FG	PVC/EPDM/cer.	✓		97720959	612
			DDE 6-10 P-PVC/E/C-X-32I001FG	PVC/EPDM/cer.	✓	✓	97720960	708
			DDE 6-10 P-PVC/V/C-X-31U2U2FG	PVC/EPDM/cer.			97720961	592
			DDE 6-10 P-PVC/V/C-X-31I001FG	PVC/EPDM/cer.		✓	97720962	688
			DDE 6-10 P-PVC/V/C-X-32U2U2FG	PVC/EPDM/cer.	✓		97720963	612
			DDE 6-10 P-PVC/V/C-X-32I001FG	PVC/EPDM/cer.	✓	✓	97720964	708
			DDE 6-10 P-PVC/T/C-X-31U2U2FG	PVC/PTFE/cer.			97720965	708
			DDE 6-10 P-PVC/T/C-X-31I001FG	PVC/PTFE/cer.		✓	97720966	805
			DDE 6-10 P-PVC/T/C-X-32U2U2FG	PVC/PTFE/cer.	✓		97720967	729
			DDE 6-10 P-PVC/T/C-X-32I001FG	PVC/PTFE/cer.	✓	✓	97720968	825
			DDE 6-10 P-PP/E/C-X-31U2U2FG	PP/EPDM/cer.			97720949	561
			DDE 6-10 P-PP/E/C-X-31I001FG	PP/EPDM/cer.		✓	97720950	658
			DDE 6-10 P-PP/E/C-X-32U2U2FG	PP/EPDM/cer.	✓		97720951	581
			DDE 6-10 P-PP/E/C-X-32I001FG	PP/EPDM/cer.	✓	✓	97720952	678
			DDE 6-10 P-PP/V/C-X-31U2U2FG	PP/EPDM/cer.			97720953	561
			DDE 6-10 P-PP/V/C-X-31I001FG	PP/EPDM/cer.		✓	97720954	658
			DDE 6-10 P-PP/V/C-X-32U2U2FG	PP/EPDM/cer.	✓		97720955	581
			DDE 6-10 P-PP/V/C-X-32I001FG	PP/EPDM/cer.	✓	✓	97720956	678
			DDE 6-10 P-PV/E/C-X-31U2U2FG	PVDF/EPDM/cer.			97720969	691
			DDE 6-10 P-PV/E/C-X-31I001FG	PVDF/EPDM/cer.		✓	97720970	787
			DDE 6-10 P-PV/E/C-X-32U2U2FG	PVDF/EPDM/cer.	✓		97720971	711
			DDE 6-10 P-PV/V/C-X-31I001FG	PVDF/EPDM/cer.		✓	97720974	787
			DDE 6-10 P-PV/V/C-X-32U2U2FG	PVDF/EPDM/cer.	✓		97720975	711
			DDE 6-10 P-PV/V/C-X-32I001FG	PVDF/EPDM/cer.	✓	✓	97720976	807
			DDE 6-10 P-PV/T/C-X-31U2U2FG	PVDF/PTFE/cer.			97720977	807
			DDE 6-10 P-PV/T/C-X-31I001FG	PVDF/PTFE/cer.		✓	97720978	904
			DDE 6-10 P-PV/T/C-X-32U2U2FG	PVDF/PTFE/cer.	✓		97720979	828
			DDE 6-10 P-SS/T/SS-X-31AAFG	SS/PTFE/SS			97720981	1,427
	15	4	DDE 15-4 P-PVC/V/C-X-31U2U2FG	PVC/EPDM/cer.			97721029	772
			DDE 15-4 P-PVC/V/C-X-31I002FG	PVC/EPDM/cer.		✓	97721030	889
			DDE 15-4 P-PVC/V/C-X-32U2U2FG	PVC/EPDM/cer.	✓		97721031	792
			DDE 15-4 P-PVC/V/C-X-32I002FG	PVC/EPDM/cer.	✓	✓	97721032	909
			DDE 15-4 P-PVC/T/C-X-31U2U2FG	PVC/PTFE/cer.			97721033	889
			DDE 15-4 P-PVC/T/C-X-31I002FG	PVC/PTFE/cer.		✓	97721034	1,005
			DDE 15-4 P-PVC/T/C-X-32U2U2FG	PVC/PTFE/cer.	✓	✓	97721036	1,026
			DDE 15-4 P-PP/E/C-X-31U2U2FG	PP/EPDM/cer.			97721017	741
			DDE 15-4 P-PP/E/C-X-31I002FG	PP/EPDM/cer.		✓	97721018	858
			DDE 15-4 P-PP/E/C-X-32U2U2FG	PP/EPDM/cer.	✓		97721019	762
			DDE 15-4 P-PP/E/C-X-32I002FG	PP/EPDM/cer.	✓	✓	97721020	878
			DDE 15-4 P-PP/V/C-X-31I002FG	PP/EPDM/cer.		✓	97721022	858
			DDE 15-4 P-PP/V/C-X-32U2U2FG	PP/EPDM/cer.	✓		97721023	762
			DDE 15-4 P-PV/E/C-X-32I002FG	PVDF/EPDM/cer.	✓	✓	97721040	1,008
			DDE 15-4 P-PV/V/C-X-31U2U2FG	PVDF/EPDM/cer.			97721041	871
			DDE 15-4 P-PV/V/C-X-31I002FG	PVDF/EPDM/cer.		✓	97721042	988
			DDE 15-4 P-PV/T/C-X-31U2U2FG	PVDF/PTFE/cer.			97721045	988
			DDE 15-4 P-PV/T/C-X-31I002FG	PVDF/PTFE/cer.		✓	97721046	1,104
			DDE 15-4 P-SS/T/SS-X-31AAFG	SS/PTFE/SS			97721049	1,607

**CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDE-B**

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDE-S B	6	10	DDE 6-10 B-PVC/E/C-X-31U2U2FG	PVC/EPDM/cer.			97720923	482
			DDE 6-10 B-PVC/E/C-X-31I001FG	PVC/EPDM/cer.		✓	97720924	579
			DDE 6-10 B-PVC/E/C-X-32U2U2FG	PVC/EPDM/cer.	✓		97720925	503
			DDE 6-10 B-PVC/E/C-X-32I001FG	PVC/EPDM/cer.	✓	✓	97720926	599
			DDE 6-10 B-PVC/V/C-X-31U2U2FG	PVC/EPDM/cer.			97720927	482
			DDE 6-10 B-PVC/V/C-X-31I001FG	PVC/EPDM/cer.		✓	97720928	579
			DDE 6-10 B-PVC/V/C-X-32U2U2FG	PVC/EPDM/cer.	✓		97720929	503
			DDE 6-10 B-PVC/V/C-X-32I001FG	PVC/EPDM/cer.	✓	✓	97720930	599
			DDE 6-10 B-PVC/T/C-X-31U2U2FG	PVC/PTFE/cer.			97720931	599
			DDE 6-10 B-PVC/T/C-X-31I001FG	PVC/PTFE/cer.		✓	97720932	696
			DDE 6-10 B-PVC/T/C-X-32U2U2FG	PVC/PTFE/cer.	✓		97720933	619
			DDE 6-10 B-PVC/T/C-X-32I001FG	PVC/PTFE/cer.	✓	✓	97720934	716
			DDE 6-10 B-PP/E/C-X-31U2U2FG	PP/EPDM/cer.			97720905	452
			DDE 6-10 B-PP/E/C-X-31I001FG	PP/EPDM/cer.		✓	97720906	548
			DDE 6-10 B-PP/E/C-X-32U2U2FG	PP/EPDM/cer.	✓		97720907	472
			DDE 6-10 B-PP/E/C-X-32I001FG	PP/EPDM/cer.	✓	✓	97720908	569
			DDE 6-10 B-PP/V/C-X-31U2U2FG	PP/EPDM/cer.			97720909	452
			DDE 6-10 B-PP/V/C-X-31I001FG	PP/EPDM/cer.		✓	97720910	548
			DDE 6-10 B-PP/V/C-X-32U2U2FG	PP/EPDM/cer.	✓		97720921	472
			DDE 6-10 B-PP/V/C-X-32I001FG	PP/EPDM/cer.	✓	✓	97720922	569
			DDE 6-10 B-PV/E/C-X-31U2U2FG	PVDF/EPDM/cer.			97720935	581
			DDE 6-10 B-PV/E/C-X-31I001FG	PVDF/EPDM/cer.		✓	97720936	678
			DDE 6-10 B-PV/E/C-X-32U2U2FG	PVDF/EPDM/cer.	✓		97720937	602
			DDE 6-10 B-PV/V/C-X-31U2U2FG	PVDF/EPDM/cer.			97720939	581
			DDE 6-10 B-PV/V/C-X-31I001FG	PVDF/EPDM/cer.		✓	97720940	678
			DDE 6-10 B-PV/V/C-X-32U2U2FG	PVDF/EPDM/cer.	✓		97720941	602
			DDE 6-10 B-PV/V/C-X-32I001FG	PVDF/EPDM/cer.	✓	✓	97720942	698
			DDE 6-10 B-PV/T/C-X-31U2U2FG	PVDF/PTFE/cer.			97720943	698
			DDE 6-10 B-PV/T/C-X-31I001FG	PVDF/PTFE/cer.		✓	97720944	795
			DDE 6-10 B-PV/T/C-X-32U2U2FG	PVDF/PTFE/cer.	✓		97720945	719
			DDE 6-10 B-PV/T/C-X-32I001FG	PVDF/PTFE/cer.	✓	✓	97720946	815
			DDE 6-10 B-SS/T/SS-X-31AAG	SS/PTFE/SS			97720947	1,318
			DDE 6-10 B-SS/T/SS-X-32AAG	SS/PTFE/SS	✓		97720948	1,338
	15	4	DDE 15-4 B-PVC/E/C-X-31U2U2FG	PVC/EPDM/cer.			97720991	663
			DDE 15-4 B-PVC/E/C-X-31I002FG	PVC/EPDM/cer.		✓	97720992	779
			DDE 15-4 B-PVC/E/C-X-32U2U2FG	PVC/EPDM/cer.	✓		97720993	683
			DDE 15-4 B-PVC/E/C-X-32I002FG	PVC/EPDM/cer.	✓	✓	97720994	800
			DDE 15-4 B-PVC/V/C-X-31U2U2FG	PVC/EPDM/cer.			97720995	663
			DDE 15-4 B-PVC/V/C-X-31I002FG	PVC/EPDM/cer.		✓	97720996	779
			DDE 15-4 B-PVC/V/C-X-32U2U2FG	PVC/EPDM/cer.	✓		97720997	683
			DDE 15-4 B-PVC/V/C-X-32I002FG	PVC/EPDM/cer.	✓	✓	97720998	800
			DDE 15-4 B-PVC/T/C-X-31U2U2FG	PVC/PTFE/cer.			97720999	779
			DDE 15-4 B-PVC/T/C-X-31I002FG	PVC/PTFE/cer.		✓	97721000	896
			DDE 15-4 B-PVC/T/C-X-32U2U2FG	PVC/PTFE/cer.	✓		97721001	800
			DDE 15-4 B-PP/E/C-X-31U2U2FG	PP/EPDM/cer.			97720983	632
			DDE 15-4 B-PP/E/C-X-31I002FG	PP/EPDM/cer.		✓	97720984	749
			DDE 15-4 B-PP/E/C-X-32U2U2FG	PP/EPDM/cer.	✓		97720985	652
			DDE 15-4 B-PP/E/C-X-32I002FG	PP/EPDM/cer.	✓	✓	97720986	769
			DDE 15-4 B-PP/V/C-X-31U2U2FG	PP/EPDM/cer.			97720987	632
			DDE 15-4 B-PP/V/C-X-31I002FG	PP/EPDM/cer.		✓	97720988	749
			DDE 15-4 B-PP/V/C-X-32U2U2FG	PP/EPDM/cer.	✓		97720989	652
			DDE 15-4 B-PV/E/C-X-31I002FG	PVDF/EPDM/cer.		✓	97721004	878
			DDE 15-4 B-PV/E/C-X-32I002FG	PVDF/EPDM/cer.	✓	✓	97721006	899
			DDE 15-4 B-PV/V/C-X-31U2U2FG	PVDF/EPDM/cer.			97721007	762
			DDE 15-4 B-PV/V/C-X-31I002FG	PVDF/EPDM/cer.		✓	97721008	878
			DDE 15-4 B-PV/T/C-X-31U2U2FG	PVDF/PTFE/cer.			97721011	878
			DDE 15-4 B-PV/T/C-X-31I002FG	PVDF/PTFE/cer.		✓	97721012	995

# CATEGORY 5 - SMART DIGITAL DOSING PUMPS - TYPE DDE-B

SMART Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Install set	Product code	£
DDE-S B	15	4	DDE 15-4 B-PV/T/C-X-32U2U2FG	PVDF/PTFE/cer.	✓		97721013	899
			DDE 15-4 B-PV/T/C-X-32I002FG	PVDF/PTFE/cer.	✓	✓	97721014	1,016
			DDE 15-4 B-SS/T/SS-X-31AAFG	SS/PTFE/SS			97721015	1,498
			DDE 15-4 B-SS/T/SS-X-32AAFG	SS/PTFE/SS	✓		97721016	1,518
DDE-XL B	60	10	DDE 60-10 B-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159328	1,842
			DDE 60-10 B-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99266486	1,888
			DDE 60-10 B-PVC/T/C-F-31U3U3FG	PVC/PTFE/cer.			99164158	1,933
			DDE 60-10 B-PVC/V/C-F-31U3U3FG	PVC/EPDM/cer.			99159329	1,842
			DDE 60-10 B-PVC/V/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99266488	1,888
			DDE 60-10 B-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159330	2,128
			DDE 60-10 B-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99266490	2,173
			DDE 60-10 B-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159331	2,218
			DDE 60-10 B-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99266492	2,263
			DDE 60-10 B-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159332	2,128
			DDE 60-10 B-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99266523	2,173
			DDE 60-10 B-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159334	2,350
			DDE 60-10 B-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99266528	2,395
			DDE 60-10 B-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159333	2,260
			DDE 60-10 B-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99266531	2,305
	120	7	DDE 120-7 B-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159342	2,193
			DDE 120-7 B-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99266835	2,238
			DDE 120-7 B-PVC/V/C-F-31U3U3FG	PVC/viton/cer.			99159343	2,193
			DDE 120-7 B-PVC/V/C-F-32U3U3FG	PVC/viton/cer.	✓		99266836	2,238
			DDE 120-7 B-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159344	2,478
			DDE 120-7 B-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99266840	2,523
			DDE 120-7 B-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159345	2,568
			DDE 120-7 B-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99259704	2,614
			DDE 120-7 B-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159346	2,478
			DDE 120-7 B-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99266844	2,523
			DDE 120-7 B-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159348	2,700
			DDE 120-7 B-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99266847	2,745
			DDE 120-7 B-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159347	2,610
			DDE 120-7 B-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99266923	2,655
	200	4	DDE 200-4 B-PVC/E/C-F-31U3U3FG	PVC/EPDM/cer.			99159356	2,377
			DDE 200-4 B-PVC/E/C-F-32U3U3FG	PVC/EPDM/cer.	✓		99266872	2,422
			DDE 200-4 B-PVC/V/C-F-31U3U3FG	PVC/viton/cer.			99159357	2,377
			DDE 200-4 B-PVC/V/C-F-32U3U3FG	PVC/viton/cer.	✓		99266877	2,422
			DDE 200-4 B-PV/E/C-F-31U3U3FG	PVDF/EPDM/cer.			99159358	2,662
			DDE 200-4 B-PV/E/C-F-32U3U3FG	PVDF/EPDM/cer.	✓		99266879	2,708
			DDE 200-4 B-PV/T/C-F-31U3U3FG	PVDF/PTFE/cer.			99159359	2,753
			DDE 200-4 B-PV/T/C-F-32U3U3FG	PVDF/PTFE/cer.	✓		99266882	2,798
			DDE 200-4 B-PV/V/C-F-31U3U3FG	PVDF/viton/cer.			99159360	2,662
			DDE 200-4 B-PV/V/C-F-32U3U3FG	PVDF/viton/cer.	✓		99266895	2,708
			DDE 200-4 B-SS/T/SS-F-31A1A1FG	SS/PTFE/SS			99159362	2,885
			DDE 200-4 B-SS/T/SS-F-32A1A1FG	SS/PTFE/SS	✓		99266897	2,930
			DDE 200-4 B-SS/V/SS-F-31A1A1FG	SS/viton/SS			99159361	2,794
			DDE 200-4 B-SS/V/SS-F-32A1A1FG	SS/viton/SS	✓		99266925	2,839






## CATEGORY 5 - SMART DIGITAL DOSING PUMPS - CABLES AND PLUGS

The listed cables and plugs are suitable for the connection of a pump to external control devices, such as process controllers, flow meters, start/stop contacts and level sensors.



### Technical data

Cable material: PVC, 0.34 mm<sup>2</sup>. Plug size: M 12

Socket for		Application	Pins	Cable Plug		Product number	£
DDA and DDE				length	type		
	Input	Analogue/ Pulse External- Stop	4	2	straight	96609014	35
				5	straight	96609016	41
				no cable	straight	96698715	29
				2	angled	96693246	50
	Output	Relay 1 Relay 2	4	2	straight	96609017	35
				5	straight	96609019	41
				no cable	straight	96696198	29
				2	angled	96698716	50
	Output	Analogue	5	2	straight	96632921	35
				5	straight	96632922	41
				no cable	straight	96609031	29
				2	angled	96699697	50
		Low-level empty tank	4	-	straight	96698715	29
	Input / output	GENIbus	5	3	straight	98589048	67
-	Mains cable	110-240 VAC	3	-	angled	96698717	20

## Wall or tank mounting assembly for SMART Digital XL DDA / DDE

The prefabricated discharge assembly for wall or tank mounting of SMART XL DDA and DDE pumps include:

Bracket with screws and washers for wall mounting or tank installation of SMART XL

Pressure loading valve, preset to 3 bar opening pressure (adjustable up to 10 bar)

Pressure relief valve, preset to 6 bar opening pressure (adjustable up to 10 bar)

Pulsation damper DBG with a volume of 0.35 l, with pressure gauge, pre-charged to 2.7 bar

Optionally without pulsation damper

For installation in rigid pipes, the pump must be limited to 50% of its maximum dosing capacity

For installation with hoses, the pump must be limited to 75% of its maximum dosing capacity

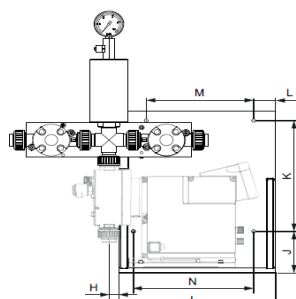


Fig. 62 Side view, wall or tank mounting assembly

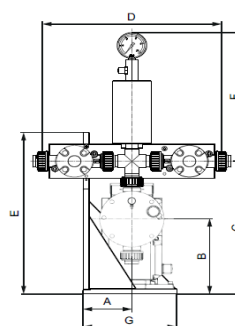


Fig. 63 Back view, wall or tank mounting assembly

Description	Body material	Gaskets	Product number	£
With pulsation damper	PVC	FKM	99211372	1,943
		EPDM	99211483	1,943
Without pulsation damper	PVC	FKM	99211484	884
		EPDM	99211485	884



# CATEGORY 5 - DME DIGITAL DOSING PUMPS - TYPE DME-AR

DME Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Display Front Side	Product code	£
DME-AR	375	10	DME 375-10 AR-PP/E/G-F-31A2A2F	PP/EPDM/glass		✓	96524941	4,915
			DME 375-10 AR-PP/E/G-F-32A2A2F	PP/EPDM/glass	✓	✓	95905001	4,956
			DME 375-10 AR-PP/E/G-S-31A2A2F	PP/EPDM/glass		✓	96524942	4,980
			DME 375-10 AR-PP/E/G-S-32A2A2F	PP/EPDM/glass	✓	✓	95905002	5,020
			DME 375-10 AR-PP/V/G-F-31A2A2F	PP/viton/glass		✓	96524943	4,932
			DME 375-10 AR-PP/V/G-F-32A2A2F	PP/viton/glass	✓	✓	95905011	4,972
			DME 375-10 AR-PP/V/G-S-31A2A2F	PP/viton/glass		✓	96524944	4,996
			DME 375-10 AR-PP/V/G-S-32A2A2F	PP/viton/glass	✓	✓	95905012	5,036
			DME 375-10 AR-PP/E/SS-F-31A2A2F	PP/EPDM/SS		✓	95905007	5,009
			DME 375-10 AR-PP/E/SS-F-32A2A2F	PP/EPDM/SS	✓	✓	95905008	5,050
			DME 375-10 AR-PP/E/SS-S-31A2A2F	PP/EPDM/SS		✓	95905009	5,074
			DME 375-10 AR-PP/E/SS-S-32A2A2F	PP/EPDM/SS	✓	✓	95905010	5,114
			DME 375-10 AR-PV/V/G-F-31A2A2F	PVDF/viton/glass		✓	96524945	5,524
			DME 375-10 AR-PV/V/G-S-31A2A2F	PVDF/viton/glass		✓	96524946	5,588
			DME 375-10 AR-PV/T/C-F-31A2A2F	PVDF/PTFE/cer.		✓	95905047	6,235
			DME 375-10 AR-PV/T/C-F-32A2A2F	PVDF/PTFE/cer.	✓	✓	95905048	6,275
			DME 375-10 AR-PV/T/C-S-31A2A2F	PVDF/PTFE/cer.		✓	95905049	6,299
			DME 375-10 AR-PV/T/C-S-32A2A2F	PVDF/PTFE/cer.	✓	✓	95905050	6,339
			DME 375-10 AR-SS/T/SS-F-31A2A2F	SS/PTFE/SS		✓	96987377	6,107
			DME 375-10 AR-SS/T/SS-F-32A2A2F	SS/PTFE/SS	✓	✓	97503539	6,147
			DME 375-10 AR-SS/T/SS-S-31A2A2F	SS/PTFE/SS		✓	97503530	6,171
			DME 375-10 AR-SS/T/SS-S-32A2A2F	SS/PTFE/SS	✓	✓	97503540	6,212
DME-AR	940	4	DME 940-4 AR-PP/E/G-F-31A2A2F	PP/EPDM/glass		✓	96524958	5,842
			DME 940-4 AR-PP/E/G-S-31A2A2F	PP/EPDM/glass		✓	96524959	5,907
			DME 940-4 AR-PP/V/G-F-31A2A2F	PP/viton/glass		✓	96524960	5,859
			DME 940-4 AR-PP/V/G-F-32A2A2F	PP/viton/glass	✓	✓	95905199	5,899
			DME 940-4 AR-PP/V/G-S-31A2A2F	PP/viton/glass		✓	96524961	5,923
			DME 940-4 AR-PP/V/G-S-32A2A2F	PP/viton/glass	✓	✓	95905200	5,963
			DME 940-4 AR-PP/E/SS-F-31A2A2F	PP/EPDM/SS		✓	95905195	5,936
			DME 940-4 AR-PP/E/SS-F-32A2A2F	PP/EPDM/SS	✓	✓	95905196	5,977
			DME 940-4 AR-PP/E/SS-S-31A2A2F	PP/EPDM/SS		✓	95905197	6,001
			DME 940-4 AR-PP/E/SS-S-32A2A2F	PP/EPDM/SS	✓	✓	95905198	6,041
			DME 940-4 AR-PV/V/G-F-31A2A2F	PVDF/viton/glass		✓	96524962	6,586
			DME 940-4 AR-PV/V/G-S-31A2A2F	PVDF/viton/glass		✓	96524963	6,650
			DME 940-4 AR-PV/T/C-F-31A2A2F	PVDF/PTFE/cer.		✓	95905235	7,297
			DME 940-4 AR-PV/T/C-F-32A2A2F	PVDF/PTFE/cer.	✓	✓	95905236	7,337
			DME 940-4 AR-PV/T/C-S-31A2A2F	PVDF/PTFE/cer.		✓	95905237	7,361
			DME 940-4 AR-PV/T/C-S-32A2A2F	PVDF/PTFE/cer.	✓	✓	95905238	7,402
			DME 940-4 AR-SS/T/SS-F-31A2A2F	SS/PTFE/SS		✓	97503533	7,263
			DME 940-4 AR-SS/T/SS-S-31A2A2F	SS/PTFE/SS		✓	97503534	7,327

# CATEGORY 5 - DME DIGITAL DOSING PUMPS - TYPE DME-AP PROFIBUS

DME Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Display Front Side	Product code	£
DME-AP	375	10	DME 375-10 AP-PP/E/G-S-31A2A2F	PP/EPDM/glass		✓	95905123	5,919
			DME 375-10 AP-PP/V/G-F-31A2A2F	PP/viton/glass		✓	95905133	5,870
			DME 375-10 AP-PP/V/G-S-31A2A2F	PP/viton/glass		✓	95905135	5,935
			DME 375-10 AP-PP/V/G-S-32A2A2F	PP/viton/glass	✓	✓	95905136	5,975
			DME 375-10 AP-PP/E/SS-F-31A2A2F	PP/EPDM/SS		✓	95905129	5,948
			DME 375-10 AP-PP/E/SS-S-31A2A2F	PP/EPDM/SS		✓	95905131	6,013
			DME 375-10 AP-PP/E/SS-S-32A2A2F	PP/EPDM/SS	✓	✓	95905132	6,053
			DME 375-10 AP-PV/T/C-F-31A2A2F	PVDF/PTFE/cer.		✓	95905173	7,174
			DME 375-10 AP-PV/T/C-F-32A2A2F	PVDF/PTFE/cer.	✓	✓	95905174	7,214

## CATEGORY 5 - DME DIGITAL DOSING PUMPS - TYPE DME-AP PROFIBUS

DME Model & Variant	Max. dose l/hr	Max pressure bar	Type designation	Wet end materials Head & Valves Gaskets/Balls	Valves spring loaded	Display Front Side	Product code	£
DME-AP	940	4	DME 375-10 AP-PV/T/C-S-31A2A2F	PVDF/PTFE/cer.		✓	95905175	7,238
			DME 375-10 AP-SS/T/SS-S-31A2A2F	SS/PTFE/SS		✓	99019300	7,328
			DME 940-4 AP-PP/V/G-F-31A2A2F	PP/viton/glass		✓	95905321	6,797
			DME 940-4 AP-PP/V/G-F-32A2A2F	PP/viton/glass	✓	✓	95905322	6,838
			DME 940-4 AP-PP/V/G-S-31A2A2F	PP/viton/glass		✓	95905323	6,862
			DME 940-4 AP-PP/V/G-S-32A2A2F	PP/viton/glass	✓	✓	95905324	6,902
			DME 940-4 AP-PP/E/SS-S-31A2A2F	PP/EPDM/SS		✓	95905319	6,940
			DME 940-4 AP-PV/T/C-F-31A2A2F	PVDF/PTFE/cer.		✓	95905361	8,236
			DME 940-4 AP-PV/T/C-S-31A2A2F	PVDF/PTFE/cer.		✓	95905363	8,300

## Diaphragm leakage sensor

Description	Product number	£
Fitted as standard on all new pumps AR/AR version		
Sensor and cable for DME 375 and DME 940 AR and AP versions (not possible for B version)	96534443	386
Connected to drain hole on the dosing head. For replacing or retrofitting on existing pumps		

## DME cables and plugs

Description	Number of poles/wires	Cable length m	Product number	£
CABLE 1: Input for analogue signal, pulse signal and diaphragm leakage. Cable and moulded plug	5	2 5	96440447 96440448	38 44
CABLE 2: Alarm relay output. Cable and moulded plug	3	2 5	96534214 96534215	59 72
CABLE 3: Input for dosing stop and dosing monitor or dosing output (pump run). Cable and moulded plug	5	2 5	96527109 96527111	38 45
CABLE 4: Dual level input (empty tank and low level). Cable and moulded plug	4	2 5	96440450 96440451	37 41
PLUG ONLY: Input for analogue signal, pulse signal and diaphragm	5	-	96440449	27
PLUG ONLY: Dual level input (empty tank and low level)	4	-	96440452	29
PLUG ONLY: Input for dosing stop and dosing monitor or dosing output (pump run)	5	-	96606401	27

## SHORT AVAILABILITY

The DMX pre-selected range is available readily from stock. The tough reliable DMX PRE-SELECT dosing pump is available in capacities up to 765 l/hr. Manual stroke length adjustment and fixed speed motor, 3 Phase or 1 Phase. The dosing head is only available in PVC with a choice of difference gaskets and ball materials.

**DMX 221 Pre-Select**

Power supply: See below  
 Mains plug: EU  
 Materials: PVC dosing head, see variants for choice of gaskets and balls  
 Valves: PVC standard  
 Controls: Manually adjustable stroke 10-100%  
 Connection set: Up to 50 l/hr, hose 6/9 mm, 6/12 mm, 9/12 mm (DN8)  
 115 l/hr, hose 19/27 mm, pipe cement 25 mm (DN20)

**Power supply: Single phase, 230 volts, 50/60 Hz**

Max. flow [l/h]	Max. pressure [bar]	Materials			Install set included	Type designation	Product number	£
		Dosing head	Gaskets	Valve balls				
16	12	PVC	FKM	Ceramic	No	DMX 16-12 B-PVC/V/C-X-G1U2U2	99206065	879
				Ceramic	Yes	DMX 16-12 B-PVC/V/C-X-G1I007	99206066	1,019
		PVC	EPDM	Ceramic	No	DMX 16-12 B-PVC/E/C-X-G1U2U2	99206067	879
				Ceramic	Yes	DMX 16-12 B-PVC/E/C-X-G1I007	99206068	1,023
27	12	PVC	FKM	Ceramic	No	DMX 27-12 B-PVC/V/C-X-G1U2U2	99206069	884
				Ceramic	Yes	DMX 27-12 B-PVC/V/C-X-G1I007	99206070	1,024
		PVC	EPDM	Ceramic	No	DMX 27-12 B-PVC/E/C-X-G1U2U2	99206071	884
				Ceramic	Yes	DMX 27-12 B-PVC/E/C-X-G1I007	99206072	1,027
50	10	PVC	FKM	Ceramic	No	DMX 50-10 B-PVC/V/C-X-G1U2U2	99206073	994
				Ceramic	Yes	DMX 50-10 B-PVC/V/C-X-G1I007	99206075	1,134
		PVC	EPDM	Ceramic	No	DMX 50-10 B-PVC/E/C-X-G1U2U2	99206076	994
				Ceramic	Yes	DMX 50-10 B-PVC/E/C-X-G1I007	99206077	1,137
115	3	PVC	FKM	Ceramic	No	DMX 115-3 B-PVC/V/C-X-G1U3U3	99206078	1,377
		PVC	EPDM	Ceramic	No	DMX 115-3 B-PVC/E/C-X-G1U3U3	99206081	1,377

**Power supply: 3 phase, 400 volts, 50/60 Hz**

Max. flow [l/h]	Max. pressure [bar]	Materials			Install set included	Type designation	Product number	£
		Dosing head	Gaskets	Valve balls				
16	12	PVC	FKM	Ceramic	No	DMX 16-12 B-PVC/V/C-X-E1U2U2	99205916	879
				Ceramic	Yes	DMX 16-12 B-PVC/V/C-X-E1I007	99205965	1,019
		PVC	EPDM	Ceramic	No	DMX 16-12 B-PVC/E/C-X-E1U2U2	99205971	879
				Ceramic	Yes	DMX 16-12 B-PVC/E/C-X-E1I007	99205972	1,023
27	12	PVC	FKM	Ceramic	No	DMX 27-12 B-PVC/V/C-X-E1U2U2	99205993	884
				Ceramic	Yes	DMX 27-12 B-PVC/V/C-X-E1I007	99205994	1,024
		PVC	EPDM	Ceramic	No	DMX 27-12 B-PVC/E/C-X-E1U2U2	99205995	884
				Ceramic	Yes	DMX 27-12 B-PVC/E/C-X-E1I007	99205997	1,027
50	10	PVC	FKM	Ceramic	No	DMX 50-10 B-PVC/V/C-X-E1U2U2	99205998	994
				Ceramic	Yes	DMX 50-10 B-PVC/V/C-X-E1I007	99205999	1,134
		PVC	EPDM	Ceramic	No	DMX 50-10 B-PVC/E/C-X-E1U2U2	99206000	994
				Ceramic	Yes	DMX 50-10 B-PVC/E/C-X-E1I007	99206001	1,137
115	3	PVC	FKM	Ceramic	No	DMX 115-3 B-PVC/V/C-X-E1U3U3	99206002	1,377
		PVC	EPDM	Ceramic	No	DMX 115-3 B-PVC/E/C-X-E1U3U3	99206003	1,377

## SHORT AVAILABILITY

The DMX pre-selected range is available readily from stock. The tough reliable DMX PRE-SELECT dosing pump is available in capacities up to 765 l/hr. Manual stroke length adjustment and fixed speed motor, 3 Phase or 1 Phase. The dosing head is only available in PVC with a choice of difference gaskets and ball materials.

**DMX 226 Pre-Select**

Power supply: See below  
 Mains plug: EU  
 Materials: PVC dosing head, see variants for choice of gaskets and balls  
 Valves: PVC standard  
 Controls: Manually adjustable stroke 10-100%  
 Connection set: up to 460 l/hr, hose 19/27 mm, pipe cement 25 mm (DN20)  
 525 l/hr and 765 l/hr, pipe cement 40 mm (DN32)

**Power supply: Single phase, 230 volts, 50/60 Hz**

Max. flow [l/h]	Max. pressure [bar]	Materials			Type designation	Product number	£
		Dosing head	Gaskets	Valve balls			
132	10	PVC	FKM	Ceramic	DMX 132-10 B-PVC/V/C-X-G1U3U3	99206047	1,969
		PVC	EPDM	Ceramic	DMX 132-10 B-PVC/E/C-X-G1U3U3	99206048	1,969
199	8	PVC	FKM	Ceramic	DMX 199-8 B-PVC/V/C-X-G1U3U3	99206049	2,006
		PVC	EPDM	Ceramic	DMX 199-8 B-PVC/E/C-X-G1U3U3	99206050	2,006
280	8	PVC	FKM	Ceramic	DMX 280-8 B-PVC/V/C-X-G1U3U3	99206051	2,006
		PVC	EPDM	Ceramic	DMX 280-8 B-PVC/E/C-X-G1U3U3	99206052	2,006
321	6	PVC	FKM	Ceramic	DMX 321-6 B-PVC/V/C-X-G1U3U3	99206063	2,030
		PVC	EPDM	Ceramic	DMX 321-6 B-PVC/E/C-X-G1U3U3	99206064	2,030

**Power supply: 3 phase, 400 volts, 50/60 Hz**

Max. flow [l/h]	Max. pressure [bar]	Materials			Type designation	Product number	£
		Dosing head	Gaskets	Valve balls			
132	10	PVC	FKM	Ceramic	DMX 132-10 B-PVC/V/C-X-E1U3U3	99206011	1,969
		PVC	EPDM	Ceramic	DMX 132-10 B-PVC/E/C-X-E1U3U3	99206033	1,969
199	8	PVC	FKM	Ceramic	DMX 199-8 B-PVC/V/C-X-E1U3U3	99206034	2,006
		PVC	EPDM	Ceramic	DMX 199-8 B-PVC/E/C-X-E1B2B2	99206035	2,006
280	8	PVC	FKM	Ceramic	DMX 280-8 B-PVC/V/C-X-E1U3U3	99206036	2,006
		PVC	EPDM	Ceramic	DMX 280-8 B-PVC/E/C-X-E1U3U3	99206037	2,006
321	6	PVC	FKM	Ceramic	DMX 321-6 B-PVC/V/C-X-E1U3U3	99206038	2,030
		PVC	EPDM	Ceramic	DMX 321-6 B-PVC/E/C-X-E1U3U3	99206039	2,030
460	6	PVC	FKM	Ceramic	DMX 460-6 B-PVC/V/C-X-E1U3U3	99206040	2,030
		PVC	EPDM	Ceramic	DMX 460-6 B-PVC/E/C-X-E1U3U3	99206042	2,030
525	3	PVC	FKM	Glass	DMX 525-3 B-PVC/V/G-X-E1KK	99206043	2,317
		PVC	EPDM	SS	DMX 525-3 B-PVC/E/SS-X-E1KK	99206044	2,317
765	3	PVC	FKM	Glass	DMX 765-3 B-PVC/V/G-X-E1KK	99206045	2,317
		PVC	EPDM	SS	DMX 765-3 B-PVC/E/SS-X-E1KK	99206046	2,317

## CATEGORY 5 - HYDRAULIC ACTUATED DIAPHRAGM DOSING PUMPS - TYPE DMH

Accuracy	Dosing flow < + 1.5%. Linearity < + 2%
Dosing flow adjustment (options on request)	Manual by stroke length adjustment between 10-100% Option: automatic stroke length adjustment via servomotor (electric or pneumatic) Option: motor frequency / speed control (inverter by others)
Materials	Enclosure: aluminium, dosing diaphragm: PTFE for dosing head and valves please see the respective table, other material options available
Head and valve options (on request)	Available in DUPLEX twin headed version Dosing head with electrical heating, only for stainless steel version Heating/cooling flange, only for stainless steel version, 80 degs C max, 1 bar Integrated sensor for diaphragm leakage indication Integrated sensor for diaphragm leakage indication
Motor options (on request)	3 AC, 220-240/380-440 V, 50/60 Hz, 440-480 V, 60 Hz, IP65/F, PTC thermistor Flameproof motors for simplex and duplex pumps, with ATEX 94/9/EC certificate Motor kits NEMA and IEC sizes
Stroke sensor (on request)	Enclosure with built in inductive stroke sensor
Servomotor (on request)	With 1000 Ohm feedback potentiometer With 4-20 mA input, with switch for manual adjustment ON/OFF Different voltages and version for ATEX

Power supply: 380-415 V. 3PH. 50 Hz.

Model	Stroke volume mls	Capacity [l/h]	Pressure [bar]	Speed [SPM]	Material			Control variant	Type designation	Product number	£
					Dosing head	Gasket	Valve balls				
Max. Back pressure: 4 bar											
DMH 257	171	750	4	73	PVC	FKM	Glass	B	DMH 750-4 B-PVC/V/G-X-X1B8B8	95718128	POA
		1500	4	146	PVC	FKM	Glass	B	DMH 1500-4 B-PVC/V/G-X-X1B8B8	95729536	9,893
Max. Back pressure: 10 bar											
DMH 251	3.3	2.4	10	146	PVC	FKM	Glass	B	DMH 2,4-10 B-PVC/V/G-X-E1B1B1	96686414	2,222
		5	10	29	PVC	FKM	Glass	B	DMH 5,0-10 B-PVC/V/G-X-E1B1B1	96722524	2,088
		13	10	63	PVC	FKM	Glass	B	DMH 13-10 B-PVC/V/G-X-E1B1B1	96686294	2,085
		19	10	96	PVC	FKM	Glass	B	DMH 19-10 B-PVC/V/G-X-E1B1B1	96686366	2,123
		24	10	120	PVC	FKM	Glass	B	DMH 24-10 B-PVC/V/G-X-E1B1B1	96722194	2,085
DMH 252	6.4	11	10	96	PVC	FKM	Glass	B	DMH 11-10 B-PVC/V/G-X-E1B1B1	96722749	2,117
		24	10	63	PVC	FKM	Glass	B	DMH 24-10 B-PVC/V/G-X-E1B1B1	96686649	2,125
		37	10	96	PVC	FKM	Glass	B	DMH 37-10 B-PVC/V/G-X-E1B1B1	96639979	2,163
DMH 253	11.3	46	10	120	PVC	FKM	Glass	B	DMH 46-10 B-PVC/V/G-X-E1B1B1	96686730	2,125
		21	10	29	PVC	FKM	Glass	B	DMH 21-10 B-PVC/V/G-X-E1B2B2	96686803	2,658
		43	10	63	PVC	FKM	Glass	B	DMH 43-10 B-PVC/V/G-X-E1B2B2	96686821	2,581
		67	10	96	PVC	FKM	Glass	B	DMH 67-10 B-PVC/V/G-X-E1B2B2	96686861	2,564
		83	10	120	PVC	FKM	Glass	B	DMH 83-10 B-PVC/V/G-X-E1B2B2	96686896	2,572
DMH 254	32	100	10	144	PVC	FKM	Glass	B	DMH 100-10 B-PVC/V/G-X-E1B2B2	96723492	2,591
		50	10	26	PVC	FKM	Glass	B	DMH 50-10 B-PVC/V/G-X-E1B2B2	96687080	6,085
		102	10	54	PVC	FKM	Glass	B	DMH 102-10 B-PVC/V/G-X-E1B2B2	96686924	6,085
		143	10	75	PVC	FKM	Glass	B	DMH 143-10 B-PVC/V/G-X-E1B2B2	96686958	6,178
		175	10	92	PVC	FKM	Glass	B	DMH 175-10 B-PVC/V/G-X-E1B2B2	96686991	5,057
		213	10	112	PVC	FKM	Glass	B	DMH 213-10 B-PVC/V/G-X-E1B2B2	96687022	6,101
		291	10	153	PVC	FKM	Glass	B	DMH 291-10 B-PVC/V/G-X-E1B2B2	96693506	6,124
DMH 255	60	194	10	54	PVC	FKM	Glass	B	DMH 194-10 B-PVC/V/G-X-E1B2B2	96687102	6,513
		270	10	75	PVC	FKM	Glass	B	DMH 270-10 B-PVC/V/G-X-E1B2B2	96687118	6,606
		332	10	92	PVC	FKM	Glass	B	DMH 332-10 B-PVC/V/G-X-E1B2B2	96687150	6,561
		403	10	75	PVC	FKM	Glass	B	DMH 403-10 B-PVC/V/G-X-E1B2B2	96687172	6,529
		550	10	112	PVC	FKM	Glass	B	DMH 550-10 B-PVC/V/G-X-E7B2B8	96638698	6,935
DMH 257	131	440	10	56	PVC	FKM	Glass	B	DMH 440-10 B-PVC/V/G-X-E1B8B8	96659624	9,224
		575	10	73	PVC	FKM	Glass	B	DMH 575-10 B-PVC/V/G-X-X1B8B8	96687413	POA
		770	10	98	PVC	FKM	Glass	B	DMH 770-10 B-PVC/V/G-X-X1B8B8	95729532	9,143
		880	10	112	PVC	FKM	Glass	B	DMH 880-10 B-PVC/V/G-X-X1B8B8	95732687	9,134
		1150	10	146	PVC	FKM	Glass	B	DMH 1150-10 B-PVC/V/G-X-X1B8B8	95734638	9,148
Max. Back pressure: 16 bar											
DMH 251	3.1	2.3	16	14	PVC	FKM	Glass	B	DMH 2,3-16 B-PVC/V/G-X-E1B1B1	96721789	2,232
		4.9	16	29	PVC	FKM	Glass	B	DMH 4,9-16 B-PVC/V/G-X-E1B1B1	96722374	POA
		12	16	63	PVC	FKM	Glass	B	DMH 12-16 B-PVC/V/G-X-E1B1B1	96693504	2,095
		18	16	96	PVC	FKM	Glass	B	DMH 18-16 B-PVC/V/G-X-E1B1B1	96721489	2,133
		23	16	120	PVC	FKM	Glass	B	DMH 23-16 B-PVC/V/G-X-E1B1B1	96635923	2,095

# CATEGORY 5 - HYDRAULIC ACTUATED DIAPHRAGM DOSING PUMPS - TYPE DMH

Model	Stroke volume mls	Capacity [l/h]	Pressure [bar]	Speed [SPM]	Material			Control variant	Type designation	Product number	£
					Dosing head	Gasket	Valve balls				
Max. Back pressure: 16 bar											
DMH 252	6.3	10	16	29	PVC	FKM	Glass	B	DMH 10-16 B-PVC/V/G-X-E1B1B1	96722635	2,593
		23	16	63	PVC	FKM	Glass	B	DMH 23-16 B-PVC/V/G-X-E1B1B1	96686643	2,516
		36	16	96	PVC	FKM	Glass	B	DMH 36-16 B-PVC/V/G-X-E1B1B1	96723034	2,500
		45	16	120	PVC	FKM	Glass	B	DMH 45-16 B-PVC/V/G-X-E1B1B1	96686720	POA
		54	16	144	PVC	FKM	Glass	B	DMH 54-16 B-PVC/V/G-X-E1B1B1	96723422	2,503
DMH 254	30	97	16	54	St. steel	FKM	St. steel	B	DMH 97-16 B-SS/V/SS-X-E1A1A1	96724418	7,448
		136	16	75	St. steel	FKM	St. steel	B	DMH 136-16 B-SS/V/SS-X-E1A1A1	96634874	7,541
		165	16	92	St. steel	FKM	St. steel	B	DMH 166-16 B-SS/V/SS-X-E1A1A1	96631575	7,496
		202	16	112	St. steel	FKM	St. steel	B	DMH 202-16 B-SS/V/SS-X-E1A1A1	96634877	7,464
		276	16	153	St. steel	FKM	St. steel	B	DMH 276-16 B-SS/V/SS-X-E1A1A1	96724311	7,487
DMH 257	78.2	272	16	56	St. steel	FKM	St. steel	B	DMH 272-16 B-SS/V/SS-X-E1C1C1	95730636	9,979
		340	16	73	St. steel	FKM	St. steel	B	DMH 340-16 B-SS/V/SS-X-E1C1C1	95725671	9,650
		450	16	98	St. steel	FKM	St. steel	B	DMH 450-16 B-SS/V/SS-X-E1C1C1	95726182	9,883
		520	16	112	St. steel	FKM	St. steel	B	DMH 520-16 B-SS/V/SS-X-X1C1C1	95740939	10,175
		680	16	146	St. steel	FKM	St. steel	B	DMH 680-16 B-SS/V/SS-X-X1C1C1	95734887	9,888
Max. Back pressure: 25 bar											
DMH 251	2.9	2.2	25	14	St. steel	FKM	St. steel	B	DMH 2,2-25 B-SS/V/SS-X-E1AA	96721690	2,892
		4.5	25	29	St. steel	FKM	St. steel	B	DMH 4,5-25 B-SS/V/SS-X-E1AA	96652976	2,842
		11	25	63	St. steel	FKM	St. steel	B	DMH 11-25 B-SS/V/SS-X-E1AA	96697936	2,764
		17	25	96	St. steel	FKM	St. steel	B	DMH 17-25 B-SS/V/SS-X-E1AA	96631576	2,748
		21	25	120	St. steel	FKM	St. steel	B	DMH 21-25 B-SS/V/SS-X-E1AA	96612100	2,756
Max. Back pressure: 50 bar											
DMH 286	25.3	85	50	56	St. steel	FKM	St. steel	B	DMH 85-50 B-SS/V/SS-X-E1A1A1	96625411	11,705
		111	50	73	St. steel	FKM	St. steel	B	DMH 111-50 B-SS/V/SS-X-E1A1A1	96725545	11,555
		170	50	112	St. steel	FKM	St. steel	B	DMH 170-50 B-SS/V/SS-X-E1A1A1	96725567	11,588
		222	50	146	St. steel	FKM	St. steel	B	DMH 222-50 B-SS/V/SS-X-E1A1A1	96725581	11,605
Max. Back pressure: 100 bar											
DMH 281	1.1	2	100	29	St. steel	FKM	St. steel	B	DMH 2-100 B-SS/V/SS-X-E2AA	96725320	4,287
		4.2	100	63	St. steel	FKM	St. steel	B	DMH 4,2-100 B-SS/V/SS-X-E2AA	96690802	4,216
		8	100	120	St. steel	FKM	St. steel	B	DMH 8-100 B-SS/V/SS-X-E2AA	96644732	4,206
		9.6	100	144	St. steel	FKM	St. steel	B	DMH 9,6-100 B-SS/V/SS-X-E2AA	96725401	4,227
DMH 283	6	10	100	27	St. steel	FKM	St. steel	B	DMH 10-100 B-SS/V/SS-X-E2A1A1	96725412	9,212
		19	100	54	St. steel	FKM	St. steel	B	DMH 19-100 B-SS/V/SS-X-E2A1A1	96628474	9,213
		27	100	75	St. steel	FKM	St. steel	B	DMH 27-100 B-SS/V/SS-X-E2A1A1	96635241	9,316
		33	100	92	St. steel	FKM	St. steel	B	DMH 33-100 B-SS/V/SS-X-E2A1A1	96725462	9,265
		40	100	112	St. steel	FKM	St. steel	B	DMH 40-100 B-SS/V/SS-X-E2A1A1	96648548	POA
		55	100	153	St. steel	FKM	St. steel	B	DMH 55-100 B-SS/V/SS-X-E2A1A1	96725487	9,256
		40	100	56	St. steel	FKM	St. steel	B	DMH 40-100 B-SS/V/SS-X-E2A1A1	96725512	10,966
DMH 285	12	52	100	73	St. steel	FKM	St. steel	B	DMH 52-100 B-SS/V/SS-X-E2A1A1	96693089	POA
		70	100	98	St. steel	FKM	St. steel	B	DMH 70-100 B-SS/V/SS-X-E2A1A1	96725529	11,029
		80	100	112	St. steel	FKM	St. steel	B	DMH 80-100 B-SS/V/SS-X-E2A1A1	96627873	POA
		105	100	146	St. steel	FKM	St. steel	B	DMH 105-100 B-SS/V/SS-X-E2A1A1	96654766	11,085
		Max. Back pressure: 200 bar									
DMH 280	0.36	1.45	200	63	St. steel	FKM	C	B	DMH 1,3-200 B-SS/V/SS-X-E2B6B6	96725285	4,606
		2.22	200	96	St. steel	FKM	C	B	DMH 2,2-200 B-SS/V/SS-X-E2B6B6	96725292	4,589
		2.81	200	120	St. steel	FKM	C	B	DMH 2,5-200 B-SS/V/SS-X-E2B6B6	96641031	POA
		3.42	200	144	St. steel	FKM	C	B	DMH 3,3-200 B-SS/V/SS-X-E2B6B6	96725300	4,617
DMH 287	5.3	18	200	56	St. steel	FKM	St. steel	B	DMH 18-200 B-SS/V/SS-X-E2C2C2	96690786	10,623
		23	200	73	St. steel	FKM	St. steel	B	DMH 23-200 B-SS/V/SS-X-E2C2C2	96725613	10,473
		31	200	98	St. steel	FKM	St. steel	B	DMH 31-200 B-SS/V/SS-X-E2C2C2	96725618	10,517
		36	200	112	St. steel	FKM	St. steel	B	DMH 36-200 B-SS/V/SS-X-E2C2C2	96725622	10,507
		50	200	146	St. steel	FKM	St. steel	B	DMH 50-200 B-SS/V/SS-X-E2C2C2	96653917	10,523
DMH 288	2.33	7.5	200	54	St. steel	FKM	St. steel	B	DMH 7,5-200 B-SS/V/SS-X-E2C2C2	96687705	9,398
		10.4	200	75	St. steel	FKM	St. steel	B	DMH 10-200 B-SS/V/SS-X-E2C2C2	96725643	9,501
		12.8	200	92	St. steel	FKM	St. steel	B	DMH 13-200 B-SS/V/SS-X-E2C2C2	96725649	POA
		15.5	200	112	St. steel	FKM	St. steel	B	DMH 15-200 B-SS/V/SS-X-E2C2C2	96725653	9,415
		21	200	153	St. steel	FKM	St. steel	B	DMH 21-200 B-SS/V/SS-X-E2C2C2	96690789	POA

## CATEGORY 5 - DOSING PUMP ACCESSORIES

### Hoses

Hoses are available in various materials, sizes and lengths.

Max. flow [l/h]*	Inside/outside diameter mm	Material	Max. pressure at 20 degs. C [bar]	Length [m]	Product number	£
7.5	4/6	PE	13	3	91835676	14
				10	91836504	18
				50	91835680	72
		PVC	0.5	3	96701733	14
				10	96702133	18
				50	96727418	72
		ETFE	20	3	95730337	37
				10	95730338	118
				50	95730339	590
17	5/8	PE	13	3	95730888	13
				10	96727393	24
				50	95730889	121
30	6/9	PE	12	3	96727409	14
				10	96727412	26
				50	96727415	128
		PVC	0.5	3	95730334	13
				10	95730335	26
				50	95730336	128
		ETFE	20	3	95730340	69
				10	95730341	225
				50	95730342	1123
30	6/12	PVC	23	1.5	96699786	13
				3	96693751	15
				5	91835683	24
				10	96653571	48
				15	96693067	82
				25	91835685	124
				50	91835686	244
60	9/12	PE	9	3	96727395	13
				10	96705657	28
				50	96727398	132
		PVC	0.5	3	96727434	12
				10	95730890	28
				50	95724702	137
		ETFE	13	3	95730343	103
				10	95730344	337
				50	95730345	1685
200	13/20	PVC reinforced	15	3	96727423	32
				10	96727420	76
				50	96692592	388
460	19/27	PVC reinforced	12	3	96727426	44
				10	96696200	124
				50	96695788	584
	19/24.6	PVC reinforced with plastic spiral	7	3	99168771	68
	25/34	PVC reinforced with plastic spiral	10	5	96535070	51
				10	96441201	106
	32/41	PVC reinforced with plastic spiral	9	5	96535077	78
				10	96535079	167

\* Viscosity similar to water

## Foot valves FV

### Excluding level switch

Foot valves are installed at the lower end of the suction hose. empty

Foot valves include:-

- strainer (mesh size approx. 0.8 mm)
- non return valve

For dosing pump capacity up to 60 l/h

- hose connection set: 4/6 mm, 6/9 mm, 6/12 mm and 9/12 mm
- pipe connection set: threaded Rp 1.4", female (stainless steel)

For dosing pump capacity up to 460 l/h

- hose connection set: with internal hose diameter of 19 or 20 mm
- pipe connection set: threaded Rp 3/4", female (stainless steel)

Foot valves exclude hose or pipe. Please order additionally

without level indication:

Max. flow [l/h]	Housing	Material of valve gasket	Ball	Product number	£
60	PE	FKM, EPDM	Ceramic	98070951	45
		PTFE	Ceramic	98070952	60
	PVDF	FKM, EPDM	Ceramic	98070953	70
		PTFE	Ceramic	98070954	85
	SS	PTFE	SS	98070963	187
460	PE	FKM, EPDM	Ceramic	99168633	164
		PTFE	Ceramic	99168635	173
	PVDF	FKM, EPDM	Ceramic	99168636	230
		PTFE	Ceramic	99168649	242
	SS	PTFE	SS	99170593	453

### Including level switch

As above, additionally with low-level and empty-tank indication also with:-

- reed switch unit with two floaters
- 5 metres of cable with PE jacket
- M 12 plug to connect DDA, DDC, DDE and DDI dosing pump
- PE cap, 58 mm dia, for assembly in Grundfos cylindrical tanks, or for use with tank adaptors

The switch mode of the low level and empty tank indication is

factory set to N/O. The switch mode can be set to N/C by turning the floaters upside down.

Electrical data of the level indication:-

- max. voltage 48 V, max. current 0.5A, max. load 10 VA

with level indication:

Max. flow [l/h]	Housing	Material of valve gasket	Ball	Product number	£
60	PE	FKM, EPDM	Ceramic	98070966	129
		PTFE	Ceramic	98070967	144
	PVDF	FKM, EPDM	Ceramic	98070968	184
		PTFE	Ceramic	98070969	199
	SS	PTFE	SS	n/a	n/a



## Rigid suction lances

### Excluding level switch

Suction lances are made from rigid pipe

Suction lances include:

- strainer (mesh size approx. 0.8 mm)
- non return valve

- hose connection set: 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm

- adjustable tank connection with holes for e.g. relief line

**Also order connecting hose between suction lance and pump**

without level indication:

Max. flow [l/h]	Grundfos tank	Max. immersion depth* [mm]	Housing	Material of valve gasket	Ball	Product number	£
60	40 l	400	PE	FKM, EPDM	Ceramic	98070978	107
				PTFE	Ceramic	98070979	122
			PVDF	FKM, EPDM	Ceramic	98070980	266
				PTFE	Ceramic	98070981	281
	60 l	500	PE	FKM, EPDM	Ceramic	98070990	107
				PTFE	Ceramic	98070991	122
			PVDF	FKM, EPDM	Ceramic	98070992	266
				PTFE	Ceramic	98070993	281
	100 & 200 l	570	PE	FKM, EPDM	Ceramic	98071002	107
				PTFE	Ceramic	98071003	122
			PVDF	FKM, EPDM	Ceramic	98071004	266
				PTFE	Ceramic	98071005	281
	100 & 200 l	690	PE	FKM, EPDM	Ceramic	98071014	107
				PTFE	Ceramic	98071015	122
			PVDF	FKM, EPDM	Ceramic	98071016	266
				PTFE	Ceramic	98071017	281
	300 l	820	PE	FKM, EPDM	Ceramic	98071026	107
				PTFE	Ceramic	98071027	122
			PVDF	FKM, EPDM	Ceramic	98071028	286
				PTFE	Ceramic	98071029	301
	500 l & 1000 l	980	PE	FKM, EPDM	Ceramic	98071038	107
				PTFE	Ceramic	98071039	122
			PVDF	FKM, EPDM	Ceramic	98071040	286
				PTFE	Ceramic	98071041	301
460	500 l & 1000 l	1100	PE	FKM, EPDM	Ceramic	98071050	107
				PTFE	Ceramic	98071051	122
			PVDF	FKM, EPDM	Ceramic	98071052	306
				PTFE	Ceramic	98071053	321
	500 l & 1000 l	1200 suitable for IBC	PE	FKM, EPDM	Ceramic	98071062	107
				PTFE	Ceramic	98071063	122
			PVDF	FKM, EPDM	Ceramic	98071064	306
				PTFE	Ceramic	98071065	321
	60 l	500	PE	FKM, EPDM	Ceramic	99199363	210
				PTFE	Ceramic	99199364	220
			PE	FKM, EPDM	Ceramic	99199365	214
				PTFE	Ceramic	99199366	224
	300	980	PE	FKM, EPDM	Ceramic	99199367	230
				PTFE	Ceramic	99199368	240
	500 & 1000 l	1200	PE	FKM, EPDM	Ceramic	99199369	239
				PTFE	Ceramic	99199370	249

## Rigid suction lances

### Including level control

As above, additionally including low level and empty tank indication also with:-

- reed switch unit with 2 floaters
- 5 metres of cable with PE jacket
- M12 plug to connection DDA, DDC, DDE or DDI dosing pump

The switch mode of the low level and empty tank indication is factory set to N/O. The switch mode can be set to N/C by turning the turning the floaters upside down.

### Also order connecting hose between suction lance and pump

Electrical data of the level indication:-

- max. voltage 48 V
- max. current 0.5 A
- max. load: 10 VA

with level indication:

Max. flow [l/h]	Grundfos tank	Max. immersion depth* [mm]	Housing	Material of valve gasket	Ball	Product number	£
60	40 l	400	PE	FKM, EPDM	Ceramic	98071074	177
				PTFE	Ceramic	98071075	192
			PVDF	FKM, EPDM	Ceramic	98071076	351
				PTFE	Ceramic	98071077	366
		500	PE	FKM, EPDM	Ceramic	98071086	177
				PTFE	Ceramic	98071087	192
			PVDF	FKM, EPDM	Ceramic	98071088	351
				PTFE	Ceramic	98071089	366
	60 l	570	PE	FKM, EPDM	Ceramic	98071098	177
				PTFE	Ceramic	98071099	192
			PVDF	FKM, EPDM	Ceramic	98071100	351
				PTFE	Ceramic	98071101	366
		690	PE	FKM, EPDM	Ceramic	98071110	177
				PTFE	Ceramic	98071111	192
			PVDF	FKM, EPDM	Ceramic	98071112	351
				PTFE	Ceramic	98071113	366
	100 l & 200 l	820	PE	FKM, EPDM	Ceramic	98071122	177
				PTFE	Ceramic	98071123	192
			PVDF	FKM, EPDM	Ceramic	98071124	371
				PTFE	Ceramic	98071125	386
		980	PE	FKM, EPDM	Ceramic	98071134	177
				PTFE	Ceramic	98071135	192
			PVDF	FKM, EPDM	Ceramic	98071136	371
				PTFE	Ceramic	98071137	386
	500 l & 1000 l	1100	PE	FKM, EPDM	Ceramic	98071146	177
				PTFE	Ceramic	98071147	192
			PVDF	FKM, EPDM	Ceramic	98071148	391
				PTFE	Ceramic	98071149	405
		1200 suitable for IBC	PE	FKM, EPDM	Ceramic	98071158	177
				PTFE	Ceramic	98071159	192
			PVDF	FKM, EPDM	Ceramic	98071160	391
				PTFE	Ceramic	98071161	405
460	60 l	500	PE	FKM, EPDM	Ceramic	99161410	356
				PTFE	Ceramic	99161411	366
	100 & 200 l	690	PE	FKM, EPDM	Ceramic	99161412	360
				PTFE	Ceramic	99161943	370
	300	980	PE	FKM, EPDM	Ceramic	99161944	376
				PTFE	Ceramic	99161945	386
	500 & 1000 l	1200	PE	FKM, EPDM	Ceramic	99161946	384
				PTFE	Ceramic	99161947	394

See tank adaptors on next page for installing in any chemical containers. Immersion lengths are adjustable when used with the adaptor!

## Level control units


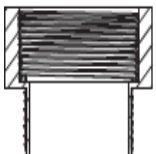


Level control units are suitable for dosing pumps with input for level control. The switch mode of the reed switch unit is factory set to N/O. The switch mode can be set to N/C by turning the floater(s).

Description	Product number	£
Level control unit for agitator protection up to 60 l/hr. Clip to suction lance. Material PE	98306210	137
Flexible control unit with 2 float switches, 5 m cable, and weight, 60 l/hr max.	98375695	133

## Tank adaptors for fitting suction lances and foot valves (with level indication)

### Adaptors for any chemical containers or tanks

These adaptors allow the installation of standard suction lances (G 2 thread) and foot valves with level indication (PE cap) on different types of containers and tanks

Adaptor type	for container type	Remark	Product number	£
	counter nut for tanks without threaded opening e.g. 100-litre square tank or 1000 litre cylindrical tank	PVC, grey	98071170	15
	containers with 2" NPT threaded opening	PVC, grey	98156690	50
	drums with S 70 x 6 coarse thread (MAUSER 2")	PE, blue	98071171	31
	drums with S 56 x 4 coarse thread (TriSure®)	PE, orange	98071172	31
	Jerri cans with small opening (approx. 36 dia)	PE, green	98071173	31
	Jerri cans with medium sized opening (approx. 45 dia)	PE, yellow	98071174	20
	Jerri cans with large opening (approx. 57 dia)	PE, brown	98071175	31
	US container with bung hole of 63 mm (ASTM International)	PE, white	98071176	31
	IBC with opening of 150 mm dia, S 160 x 7	PE, black	98071177	42

## Emission protection kits

Gas emitted by liquid in a container can cause bad odour and corrosion. Emission protection kits help avoid such problems. Suction lances can be retrofitted with emission protection kits.

Two variants are available:

-emission protection kit with snifting valve: no gas can escape from the container, but air can be drawn in.

- emission protection kit for use with filter: gas can escape from the container and air can be drawn in.

The kit can be connected to a filter by means of a 4/6 mm hose.

They include:

- gasket for the tank adaptor
- snifting valve or hose nipple 4/6 mm (hose is not included)
- gasket for the cable outlet

Variant		Product number	£
Emission protection kit with snifting valve	Can be retrofitted	98071178	126
Emission protection kit for use with a filter	Can be retrofitted	98071179	87

## M 12 plug-to-flat plug adaptor

The adaptor allows to connect suction lances or foot valves with level indication to pumps with a level input designed for flat plugs (e.g. DMX and DMH with AR control unit).

Description	Product number	£
M 12 plug-to-flat plug adaptor	96635010	69

## Injection units

Injection units connect the dosing line with the process line. They ensure a minimum backpressure of 0.7 bar, and avoid backflow of the dosing liquid. In general they include: injection pipe (PP, PVC and PVDF versions can be shortened), spring loaded non-return valve with spring, hose connection set: 4/6 mm, 6/9 mm, 6/12 mm and 9/12 mm and for stainless steel Rp 1/4" female threaded connection. [See next page for sodium hypochlorite injectors](#)

Max. flow rate [l/h]	Max. pressure [bar]	Housing	Material gasket	Ball	Product number	£
60	16	PP	FKM	Ceramic	95730904	54
			EPDM	Ceramic	95730908	54
		PVC	FKM	Ceramic	95730912	48
			EPDM	Ceramic	95730916	48
			PTFE	Ceramic	95730920	81
		PVDF	FKM	Ceramic	95730924	81
			EPDM	Ceramic	95730928	81
			PTFE	Ceramic	95730932	115
	100	St.steel	PTFE	St stl	95730936	285
	16	PVC	FKM	Ceramic	95730940	87
			EPDM	Ceramic	95730944	87
			PTFE	Ceramic	95730948	120

### Injection units for larger pumps

Injection pipe with immersion depth of 120 mm. PP, PVC and PVDF versions can be shortened.

Spring loaded non-return valve with 2.4610 (Alloy) spring.

Hose and pipe connection set (PVC, PP, PVDF):

- for hose with internal diameter 19 or 20 mm

- for pipe with external diameter 25 mm

Pipe connection set (stainless steel): threaded, Rp 3/4", internal thread.

Max. flow rate [l/h]	Max. pressure [bar]	Housing	Material gasket	Ball	Product number	£
460	10	PVC	FKM	Ceramic	99168657	134
			EPDM	Ceramic	99168658	134
			PTFE	Ceramic	99169217	153
		PP	FKM	Ceramic	99169220	160
			EPDM	Ceramic	99169223	160
			FKM	Ceramic	99169227	291
		PVDF	EPDM	Ceramic	99169228	291
			PTFE	Ceramic	99169229	311
		St stl	PTFE	St stl	99169230	565

Max. flow rate [l/h]	Conn.	Max. pressure [bar]	Housing	Gasket	Ball	Material gasket	Ball	Product number	£
1150	1 1/4" f	10	<b>Threaded connection 1" BSP m</b>						
			PP	EPDM	Glass	Kit, injec.valve DN20, RP 1 1/4" PP/E/G		96527122	473
			PP	Viton	Glass	Kit, injec.valve DN20, RP 1 1/4" PP/V/G		96527123	483
			PVDF	Viton	Glass	Kit, injec.valve DN20, RP 1 1/4" PV/V/G		96527124	880
			<b>Threaded connection 1" NPT m</b>						
			PP	EPDM	Glass	Kit, injection valve NPT 1 1/4" PP/E/G		96566148	473
	1 1/4" NPT	10	PP	Viton	Glass	Kit, injection valve NPT 1 1/4" PP/V/G		96566149	483
			PVDF	Viton	Glass	Kit, injection valve NPT 1 1/4" PV/V/G		96566152	880
			SS	Viton	SS	Kit, injection valve RP1 1/4" SS/V/SS		96534459	1150
		100	SS	Viton	SS	Kit, injection valve NPT 1 1/4" SS/V/SS		96537971	1150
			<b>Threaded connection 2"</b>						
	1500	2" f	10	PVC	Viton	Glass	IV 0406-10 PVC/V/GX-40/200.00	96688318	572

## Injection units for sodium hypochlorite

Injection units with lip valve are typically used to add sodium hypochlorite solution to water with a high carbonate content. The FKM lip prevents crystallisation and blocking caused by alkali carbonate reactions at the point of injection.

Max. flow rate [l/h]	Max. pressure [bar]	Housing	Material gasket	Ball	Product number	£
60	16	PVC	FKM	Ceramic	95730964	87

## Injection units with ball valve

Injection units with ball valve are used for applications where the injection point has to be closable. The ball valve is placed between the injection pipe and the spring loaded non return valve. Thus, the dosing line can be completely disconnected from the process. The non return valve can be disassembled and cleaned without stopping the process and emptying the process line.

Max. flow rate [l/h]	Max. pressure [bar]	Housing	Material gasket	Ball	Product number	£
60	16	PVC	FKM	Ceramic	95738319	POA
			EPDM	Ceramic	95730956	207
	24	St. steel	PTFE	st stl	95730960	393
460	10	PVC	FKM	Ceramic	99206582	252
			EPDM	Ceramic	99206585	252
		St. steel	PTFE	st stl	99206586	692

## Withdrawable injection units

These injection units are used when regular cleaning of the injection pipe is required. Their construction allows to withdraw the injection unit from the process line and to clean it, without stopping the water flow. The injection point can be closed with the integrated ball valve. The immersion depth of the injection pipe can be adjusted.

Max. flow rate [l/h]	Max. pressure [bar]	Housing	Material gasket	Ball	Product number	£
60	10	PVC	FKM	Ceramic	95730968	418
			EPDM	Ceramic	95730972	418

## Hot-injection units with ball valve

Hot injection units with ball valve can be used for direct injection of dosing liquid into processes with a temperature of up to 120 degs C. In addition, they also include: injection pipe in stainless steel, ball valve installed between the injection pipe and the cooling pipe in stainless steel, bendable cooling pipe, st. steel, length 1 m

Max. flow rate [l/h]	Max. pressure [bar]	Housing	Material gasket	Ball	Product number	£
60	10	PVDF	PTFE	Ceramic	95730976	312
	16	St. steel	PTFE	st stl	95730980	510

## Multi-function valves, pressure relief valves, and pressure loading valves

**Multi-function valves** combine the functions of pressure relief valves and pressure loading valves. In addition, they allow deaeration of the pump and emptying of the discharge line for maintenance.

**Pressure relief valves**, or safety valves, protect the pump and the discharge installations against excessive pressures. All pressurised dosing installations should include a pressure relief valve.

**Pressure loading valves** maintain a certain back pressure for the pump. They are used in applications with too low back pressure or no back pressure at all. Pressure loading valves are also used to prevent syphoning, when the admission pressure is higher than the back pressure. They provide a constant back pressure for the dosing pump when the system pressure is fluctuating.

### Multi-function valves (5/8" only)

A multi-function valve is mounted directly on the pump discharge side (5/8" fitting only). The top connection is for the discharge line, the side connection leads the relief liquid back into the tank. Loading pressure adjustable from 1 to 4 bar, factory set to 3 bar. Relief pressure adjustable from 7 to 16 bar, factory set at 10 bar or 16 bar. Maximum system pressure 16 bar. Hose connection set: 4/6 mm, 6/9 mm, 6/12 mm and 9/12 mm

Max. flow rate [l/h]	Housing	Relief pressure [bar]	Connection material	Material gasket	Diaphragm	Product number	£
60	PVDF	10 bar	PP	FKM	PTFE	95704585	204
				EPDM	PTFE	95704591	203
			PVC	FKM	PTFE	95730807	204
				EPDM	PTFE	95730808	203
				PTFE	PTFE	95730809	258
			PVDF	FKM	PTFE	95730810	211
				EPDM	PTFE	95730811	211
				PTFE	PTFE	95730812	265
		16 bar	PP	FKM	PTFE	95730821	202
				EPDM	PTFE	95730822	201
			PVC	FKM	PTFE	95730823	202
				EPDM	PTFE	95730824	201
				PTFE	PTFE	95730825	255
			PVDF	FKM	PTFE	95730826	209
				EPDM	PTFE	95730827	209
				PTFE	PTFE	95730828	262

### Pressure relief valves

Pressure relief valves are installed in the discharge line near the pump, using the 2 in-line connections.

The side connection leads the relief liquid back into the tank. Relief pressure adjustable from 5 to 10 bar, factory set at 10 bar or relief pressure adjustable from 7 to 16 bar, factory set at 16 bar. Maximum system pressure 16 bar. Hose connections: 4/6 mm, 6/9 mm, 6/12 mm and 9/12 mm. Stainless steel: threaded Rp 1/4", female

Max. flow rate [l/h]	Relief pressure [bar]	Housing and connection material	Material gasket	Diaphragm	Product number	£
60	relief pressure 10 bar	PP	FKM/EPDM	PTFE	95730757	132
		PVC	FKM/EPDM	PTFE	95730758	131
			PTFE	PTFE	95730759	183
		PVDF	FKM/EPDM	PTFE	95730760	191
			PTFE	PTFE	95730761	241
		Stainless steel	No gaskets	PTFE	95730771	314
	relief pressure 16 bar	PP	FKM/EPDM	PTFE	95730773	132
		PVC	FKM/EPDM	PTFE	95730774	132
			PTFE	PTFE	95730775	183
		PVDF	FKM/EPDM	PTFE	95730776	191
			PTFE	PTFE	95730777	241
		Stainless steel	No gaskets	PTFE	95730783	314

## CATEGORY 5 - DOSING PUMP ACCESSORIES

### Pressure relief valves for larger pumps

Hose and pipe connection set (PVC, PP, PVDF):

- for hoses with internal diameter 19 or 20 mm

- for pipes with external diameter 25 mm

- Pipe connection in stainless steel: 3/4" internal thread

Max. flow rate [l/h]	Relief pressure [bar]	Housing and connection material	Material gasket	Diaphragm	Product number	£
460	3-10 adjustable	PVC	FKM/EPDM	PTFE	99131032	225
			PTFE	PTFE	99141139	255
		PP	FKM/EPDM	PTFE	99141197	271
		PVDF	FKM/EPDM	PTFE	99141212	493
			PTFE	PTFE	99141224	522
		Stainless steel	-	PTFE	99141228	442

See below for connection sets

Max. flow rate [l/h]	Relief pressure [bar]	Material	Gasket	Diaphragm	Connection	Product number	£
1150	4-11 adjustable	PP	EPDM	PTFE	32/40 mm pipe	96295893	896
		PP	FKM	PTFE		96295894	885
		PVC	EPDM	PTFE		96295895	761
		PVC	FKM	PTFE		96295896	751
		PVDF	PTFE	PTFE	32 mm flange/40 mm	96692233	2020
		st.stl.	-	PTFE	1 1/4" BSP f	96295897	2503

### Pressure loading valves

Pressure loading valves are installed in the discharge line after the pressure relief valve, and after the pulsation damper, if fitted. Loading pressure: factory set at 3 bar, adjustable from 1 to 5 bar. Maximum system pressure 16 bar. Hose connection set: 4/6 mm, 6/9 mm, 6/12 mm and 9/12 mm. Stainless steel threaded, Rp 1/4", female

Max. flow rate [l/h]	Maximum load pressure [bar]	Housing and connection material	Material gasket	Diaphragm	Product number	£
60	1-5 adjustable	PP	FKM/EPDM	PTFE	95730741	116
		PVC	FKM/EPDM	PTFE	95730742	114
			PTFE	PTFE	95730743	149
		PVDF	FKM/EPDM	PTFE	95730744	163
			PTFE	PTFE	95730745	216
		Stainless steel	No gaskets	PTFE	95730751	297

### Pressure loading valves for larger pumps

Hose and pipe connection set (PVC, PP, PVDF):

- for hoses with internal diameter 19 or 20 mm

- for pipes with external diameter 25 mm

- Pipe connection in stainless steel: 3/4" internal thread

Max. flow rate [l/h]	Maximum load pressure [bar]	Housing and connection material	Material gasket	Diaphragm	Product number	£
460	3-10 bar adjustable	PP	FKM/EPDM	PTFE	99140610	232
		PVC	FKM/EPDM	PTFE	99132186	194
			PTFE	PTFE	99140593	212
		PVDF	FKM/EPDM	PTFE	99140646	420
			PTFE	PTFE	99140651	440
		Stainless steel	No gaskets	PTFE	99135772	393

See below for connection size:

1150	1-4 adjustable	PP	EPDM	PTFE	32/40 mm pipe	96295908	801
		PP	FKM	PTFE		96295909	795
		PVC	EPDM	PTFE		96295910	815
		PVC	FKM	PTFE		96295911	817
		PVDF	PTFE	PTFE	32 mm flange/40 mm	96692234	1641
		st.stl.	-	PTFE	1 1/4" BSP	96295912	2245

## Pressure valves

Pressure valves provide a constant back pressure of 3 bar. They are particularly **required for SMART DDA-FC or DDA-FCM** pumps at very small flow rates. Pressure valves are installed either directly on the pump discharge side, or on the pressure relief valve. Loading pressure 3 bar, not adjustable. Maximum system pressure 16 bar. Spring material: Alloy C-4 (NiMo16CrTi, material number 2.4610). No connections included.

Max. flow rate [l/h]	Ball	Housing material	Material	Product number	£	
60	Ceramic	PP	FKM	95730325	88	
			EPDM	95730326	88	
		PVC	FKM	95730327	88	
			EPDM	95730328	88	
			PTFE	95730329	121	
		PVDF	FKM	95730330	135	
			EPDM	95730331	135	
			PTFE	95730332	169	
		Stainless steel	Stainless steel	PTFE	95730333	269
		200	PVC	ceramic	EPDM	99229021
	FKM			99229033	193	
PVDF	ceramic		EPDM	99229018	344	
			FKM	99229020	344	
Stainless steel	Stainless steel		#	99229034	352	

## Pulsation dampers and calibration pots

Pulsation dampers are used to even out the pulsating flow reducing acceleration head pressure produced by positive displacement pumps, ie diaphragm dosing pumps. They can be installed on the suction or discharge side.

Calibration pots have a graduated glass cylinder with a fine scale used if necessary to calibrate the dosing pump. They should not be used as pulsation dampers.

## Suction side pulsation dampers CSD with calibration scale

Pulsation dampers CSD are installed on the suction side of the dosing pump. Includes sight glass with calibration scale and aeration valve.

Damper volume	Max pump stroke volume	Max no. of pumps with max stroke vol	Scale division	Pipe connection (ID/OD)	Material	Product number	£	
[l]	[ml]	[ml]	[ml]	[mm]	Body / Sight glass	Gasket		
0.25	2	3	2	16/12	PVC / PVC	FKM/EPDM	99186948	350
						PTFE	99217401	451
0.5	7	3	5	16/12	PVC / PVC	FKM/EPDM	99187777	372
						PTFE	99217402	462
1.5	19	3	20	16/12	PVC / PVC	FKM/EPDM	99188854	668
						PTFE	99217403	706
3	45	2	25	16/12	PVC / PVC	FKM/EPDM	99190807	755
						PTFE	99217406	881

## Manual vacuum pump kit

In installations without flooded suction, the pulsation damper CSD can be filled with the manual vacuum pump kit. This makes the startup of the dosing pump easier and prepares the pulsation damper CSD for calibration.

Description	Product number	£
Manual vacuum pump kit	99218131	576



## Calibration pots

Calibration pots are intended for flow measurement or calibration of dosing pumps. They should be isolated from the pipework during normal operation. Glass cylinder with acrylic outer shield, aeration valve on top and isolating valve on the bottom.

Volume [ml]	Max. pump stroke vol [ml]	Scale division [ml]	Pipe connection		Material		Product number	£
			OD [mm]	[inch]	Body	Gasket		
0.25	2	2	16	-	PVDF	FKM	99224280	1551
			-	1/2"	SS	FKM	99224303	1160
			-	1/2"	SS	EPDM	99224304	1160
0.5	7	5	16	-	PVDF	FKM	99224305	1849
			-	1/2"	SS	FKM	99224307	1209
			-	1/2"	SS	EPDM	99224308	1209
2	19	20	25	-	PVDF	FKM	99224309	2864
			-	1"	SS	FKM	99224310	1577
			-	1"	SS	EPDM	99224311	1577
4	45	25	25	-	PVDF	FKM	99224312	3682
			-	1"	SS	FKM	99224313	2267
			-	1"	SS	EPDM	99224314	2267

## Vacuum pump kit for calibration pots

In installations without flooded suction, the calibration pot can be filled with the manual vacuum pump kit. This makes the startup of the dosing pump easier for calibration.

Description	Product number	£
Vacuum pump kit for calibration pots	99226934	1257

## Discharge side pulsation dampers DB and DBG

Pulsation dampers DB and DBG have a separating diaphragm and are intended for the discharge side of the dosing pump. We recommend using one pump per pulsation damper.

### Type DB without pressure gauge

Nominal damper volume [l]	Max pump stroke vol [ml]	Pipe connection		Max operating pressure [bar]	Material		Product number	£
		ID/OD [mm]	BSPf [inch]		Body	Gasket		
0.15	7	16/12	-	10	PVC	FKM	99202642	624
						EPDM	99202653	624
					PP	FKM	99202654	624
						EPDM	99202657	624
		16/12	1/2"	180	SS	FKM	99202660	941
						EPDM	99202661	941
					PVDF	PTFE	99202658	1739
						PTFE	99202658	1739
0.35	19	25/20	-	10	PVC	FKM	99202662	716
						EPDM	99202663	716
					PP	FKM	99202664	716
						EPDM	99202665	716
		-	1/2"	130	SS	FKM	99202667	1381
						EPDM	99202669	1381
					PVDF	PTFE	99202666	2393
						PTFE	99202666	2393
0.65	45	25/20	-	10	PVC	FKM	99202670	941
						EPDM	99202671	941
					PP	FKM	99202672	941
						EPDM	99202673	941
		-	3/4"	50	SS	FKM	99202675	1463
						EPDM	99202676	1463
					PVDF	PTFE	99202674	3028
						PTFE	99202674	3028

## CATEGORY 5 - DOSING PUMP ACCESSORIES

### Pulsation damper type DBG with pressure gauge

Nominal damper volume [l]	Max pump stroke vol [ml]	Pipe connection		Max operating pressure [bar]	Material		Product number	£
		ID/OD [mm]	BSPf [inch]		Body	Gasket		
0.15	7	16/12	-	10	PVC	FKM	99202679	957
						EPDM	99202680	957
					PP	FKM	99202681	957
						EPDM	99202682	957
		16/12	1/2"	180	SS	FKM	99202684	1274
						EPDM	99202685	1274
					PVDF	PTFE	99202683	2072
0.35	19	25/20	-	10	PVC	FKM	99202687	1049
						EPDM	99202688	1049
					PP	FKM	99202689	1049
						EPDM	99202690	1049
		-	1/2"	130	SS	FKM	99202692	1714
						EPDM	99202693	1714
					PVDF	PTFE	99202691	2727
0.65	45	25/20	-	10	PVC	FKM	99202694	1274
						EPDM	99202695	1274
					PP	FKM	99202696	1274
						EPDM	99202697	1274
		-	3/4"	50	SS	FKM	99202699	1796
						EPDM	99202700	1796
					PVDF	PTFE	99202698	3361

### Type DB without pressure gauge for DME and DMH pumps

Nominal damper volume [l]	Max pump stroke vol [ml]*	Pipe connections			Max operating pressure [bar]	Material  Body / Gasket	Max operating pressure [bar]	Product number	£
		External thread	Internal thread	Pipe thread					
1.4	75	1 1/4"	1"	20/25 mm	10	PVC / FKM	10	96688186	2331
		1 1/4"	1"	20/25 mm	10	PVC / EPDM	10	96688187	2013
		1 1/4"	3/4"	3/4"	40	SS / FKM	40	96688188	2714
		1 1/4"	3/4"	3/4"	40	SS / EPDM	40	96688189	2435
		1 1/4"	1"	20/25 mm	10	PP / FKM	10	96688190	2237
		1 1/4"	1"	20/25 mm	10	PP / EPDM	10	96688191	1924
		1 1/4"	3/4"	20/25 mm	20	PVDF / PTFE	20	96736538	7671
2.6	131	2"	1"	32/40 mm	10	PVC / FKM	10	96688192	3141
		2"	1"	32/40 mm	10	PVC / EPDM	10	96688193	2599
		2"	1"	1 1/4"	30	SS / FKM	30	96688194	4033
		2"	1"	1 1/4"	30	SS / EPDM	30	96688195	3455
		2"	1"	32/40 mm	10	PP / FKM	10	96688196	2921
		2"	1"	32/40 mm	10	PP / EPDM	10	96688197	2375
		2"	1"	32/40 mm	20	PVDF PTFE	20	96727195	10572
5.6	256	2"	1 1/2"	32/40 mm	10	PVC / FKM	10	96688198	4928
		2"	1 1/2"	32/40 mm	10	PVC / EPDM	10	96688199	3277
		2"	1 1/2"	Rp 1 1/4"	40	SS / FKM	40	96688200	6004
		2"	1 1/2"	Rp 1 1/4"	40	SS / EPDM	40	96688201	5276
		2"	1 1/2"	32/40 mm	10	PP / FKM	10	96688202	4010
		2"	1 1/2"	32/40 mm	10	PP / EPDM	10	96688203	4746
		2"	1"	32/40 mm	20	PVDF / PTFE	20	96688204	12938
9.5	500	2"	2"	65/75 mm	10	PVC / FKM	10	96688205	8244
		2"	2"	65/75 mm	10	PVC / EPDM	10	96688206	7216
		Flange	2"		30	SS / FKM	30	95702090	4044
		Flange	2"		30	SS / EPDM	30	95702091	3333
		Flange	2"		10	PP / FKM	10	95702092	2984
		Flange	2"		10	PP / EPDM	10	95702093	2521
		Flange	1 1/4"		20	PVDF / PTFE	20	95702094	6423

\* Not suitable in every case, please check with calculation or on request

SS - stainless steel 1.4404 (EN 10027-2)

#### Options

- Basic type without connections and mounting material
- Different connections
- Different preload pressure
- With integral pressure gauge

All options available upon request

## Pressure gauges

Description	Maximum pressure of pulsation damper	Product number	£
Pressure gauge for discharge side pulsation damper with separating diaphragm	10	95730263	457
	25	95730264	448
	60	98031543	457
	160	98031544	457
	250	98031545	457

## Filling devices for pulsation dampers DB and DBG

Filling devices make the adjustment of the pre-charging pressure of pulsation dampers easy. The filling device is connected to a local compressed air or nitrogen source and the filling valve of a pulsation damper. It can be removed when the pressure is adjusted. Filling devices are available with different pressure gauges.

Description	Connection	Max. operating pressure [bar]	Product number	£
Filling device with pressure gauge	1/4"	25	96727342	1691
		60	96727343	1691
		160	96727344	1691
		250	96727345	1691

## Tyre valve adaptor (Schrader valve)

A schrader valve adaptor allows the use of a common air pump with tyre valve for filling the pulsation damper with air.

Description	Product number	£
Schrader valve up to 8 bar for use in conjunction with compressed air filling devices or pressure gauge.	96727332	154

## CATEGORY 5 - DOSING PUMP ACCESSORIES

### Pump connection kits

Retrofit pump connection kits and inlay kits for the integration of standard Grundfos dosing pumps into installations with various sizes of hoses or pipes. A pump connection kit includes: 1 set of inlays, 1 union nut.

Connection type	Pump Type	Pump connection size	One union nut and insert(s) for hose/pipe sizes:	Material	Product number	£		
Hose connection	SMART-S DDI60 DMX 4-50 DMH 5-46	5/8" threaded, male	4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm	PP	97691902	15		
				PVC	97691903	15		
				PVDF	97691904	24		
			0.17" x 1/4", 1/4" x 3/8", 3/8" x 1/2"	PP	97691905	15		
				PVC	97691906	15		
				PVDF	97691907	24		
Hose connection	SMART-S DDI60 DMX 4-50 DMH 5-46	5/8" threaded, male	4/6 mm, or 0.17" x 1/4"	PP	97702474	13		
				PVC	97702485	13		
				PVDF	97702495	18		
			5/8 mm	PP	97702475	14		
				PVC	97702486	13		
				PVDF	97702496	18		
			6/8 mm	PP	97702476	13		
				PVC	97702487	12		
				PVDF	97702497	19		
			6/9 mm	PP	97702477	13		
				PVC	97702488	12		
				PVDF	97702498	18		
			6/12 mm	PP	97702478	13		
				PVC	97702489	13		
				PVDF	97702499	18		
			9/12 mm	PP	97702479	14		
				PVC	97702490	13		
				PVDF	97702500	18		
			1/4" x 3/8"	PP	97702482	13		
				PVC	97702492	11		
				PVDF	97702503	18		
			3/8" x 1/2"	PP	97702483	14		
				PVC	97702493	11		
				PVDF	97702504	18		
Hose (cutting ring type)	SMART-S DDI60 DMX 4-50 DMH 5-46	5/8" threaded, male	1/8" x 1/4"	PP	97702481	26		
PVDF				97702502	28			
Pipe (fusion weld)			External diameter 16 mm	PP	97702480	11		
PVDF				97702501	20			
Pipe (solvent cement)			Internal diameter 12 mm	PVC	97702491	14		
PP				97702484	22			
Pipe, threaded, male			1/2" NPT	PVC	97702494	22		
PVDF				97702505	55			
SS				97702508	42			
Pipe, threaded, female			Rp 1/4"	SS	97702472	39		
Pipe (cutting ring type)			1/4" NPT	SS	97702473	39		
			4/6 mm	SS	97702506	83		
			8/10 mm	SS	97702507	87		
Hose clamp			DME 60	1 1/4" threaded, 2" threaded, male	19-27 mm and 25/34 mm	PP	96535096	42
			DME 150		PVDF	96535102	68	
			DME 375		PP	96535103	98	
			DME 940		PVDF	96535104	195	
Hose connection (including 1 1/4" union nut)	SMART-XL DDI 150 DMX 67-321 DMH 100-332	19/20 mm or 3/4" hose ID nipple and clamp [Q]	13/20 mm cone and ring [A6]	PVC	91835696	27		
			19/20 mm hose ID nipple and clamp [U3]	PP	99082037	26		
			19/20 mm or 3/4" hose ID nipple and clamp [Q]	PP	99169576	15		
				PVC	99169603	14		
				PVDF	99169728	43		
			19-27 mm and 25/34 mm	PP	96727574	14		
				PVDF	96727612	124		
				PVDF	96727620	226		
			Pipe (fusion weld)	DMX 67-321	20/25 mm	PP	91835697	20
			PVDF			91835698	57	
			Pipe (solvent cement)	DMH 100-332	PVC	96701989	11	
Pipe connection external thread	3/4" BSPm	PP	99082043		30			
		PVDF	99082044	83				
		SS	99082045	87				
		Alloy C-4	99082046	206				
Pipe, threaded, male	3/4" NPT	PVC	91835723	27				
		PVDF	91835726	130				

## CATEGORY 5 - DOSING PUMP ACCESSORIES

### Pump connection kits continued

Connection type	Pump Type	Pump connection size	One union nut and insert(s) for hose/pipe sizes:	Material	Product number	£
Pipe, threaded, female	SMART-XL, DDI 150 DMX 67-321, DMH 100-332		19/22 mm	SS	96727555	214
			3/4"	SS	96700184	102
			3/4" NPT	SS	91835724	112
Hose clamp	DMX 440-765 DMH 440-1500	2" threaded, male	32/42 mm	PVC	96727598	66
Pipe (fusion weld)				PP	96727596	58
Pipe (solvent cement)				PVDF	96727597	241
				PVC	96700091	30
				PP/PVC	96727610	85
Pipe, threaded, female			1 1/4" NPT	PVDF	96727541	748
			PVC	91835730	81	
Flange (ex counter flange)			40 mm 1 1/4"	PP/PVC	96727586	130
			PP	96727589	94	
			PVC	91835728	90	
			PVDF	96727588	137	
			SS	91835727	174	
Pipe, threaded female			1 1/4"	SS	96727595	177
			1 1/4" NPT	SS	91835729	199

Stainless steel grade 1.4401. Fit stainless steel fittings only to stainless steel pumps!

### Inlay kit

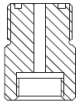
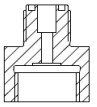
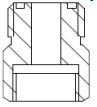
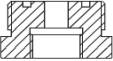
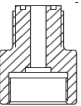
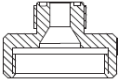
An inlay kit includes: 2 sets of inlays (inlay = internals)

Connection type	Size	Material	Product number	£
Hose internals	4/6 mm, or 0.17" x 1/4"	PP	95730984	12
		PVC	95730720	12
		PVDF	95730729	21
	5/8 mm	PP	95730711	12
		PVC	95730721	13
		PVDF	95730730	24
	6/8 mm	PP	95730712	12
		PVC	95730722	12
		PVDF	95730731	21
	6/9 mm	PP	95730713	12
		PVC	95730723	12
		PVDF	95730732	21
	6/12 mm	PP	95730714	12
		PVC	95730724	12
		PVDF	95730733	21
	9/12 mm	PP	95730715	12
		PVC	95730725	12
		PVDF	95730734	21
	13/20 mm	PVC	99170747	45
	19/20 mm ID or 3/4" ID hose	PP	99169735	17
		PVC	99169740	19
		PVDF	99169738	26
	1/4" x 3/8"	PP	95730718	12
		PVC	95730727	13
		PVDF	95730737	21
	3/8" x 1/2"	PP	95730719	12
		PVC	95730728	12
		PVDF	95730738	21
Hose (cutting ring type)	1/8" x 1/4"	PP	95730717	44
		PVDF	95730736	42
Pipe welding	External diameter 16 mm	PP	95730716	15
		PVDF	95730735	29
	External diameter 25 mm	PP	99171119	39
		PVDF	99171146	81
Pipe cementing gluing inlay	Internal diameter 12 mm	PVC	95730726	14
	External diameter 25 mm	PVC	99171177	15
Pipe, threaded, female	Rp 1/4"	SS	95730739	47
	1/4" NPT	SS	95730740	47
		PP	99182104	48
Pipe connection external thread	3/4" BSP male	PVDF	99182109	126
		SS	99182114	101
		Alloy C-4	99182136	335

## CATEGORY 5 - DOSING PUMP ACCESSORIES

### Adaptors Threaded adaptors

Threaded adaptors are used to convert between different threaded connection sizes. A threaded adaptor kit includes: 1 adaptor and 1 O-ring

Type	Threaded connection size		Housing material	Material gaskets	Product number	£
	Female	Male				
	3/8"	5/8"	PP	FKM/EPDM	95730407	30
			PVC	FKM/EPDM	95730408	30
				PTFE	95730409	46
			PVDF	FKM/EPDM	95730410	55
				PTFE	95730411	71
	5/8"	3/8"	PP	FKM/EPDM	95730412	30
			PVC	FKM/EPDM	95730413	30
				PTFE	95730414	46
			PVDF	FKM/EPDM	95730415	55
				PTFE	95730416	71
	5/8"	3/4"	PP	FKM/EPDM	95730417	30
			PVC	FKM/EPDM	95730418	30
				PTFE	95730419	46
			PVDF	FKM/EPDM	95730420	55
				PTFE	95730421	71
	5/8"	1 1/4"	PP	FKM/EPDM	95730422	55
			PVC	FKM/EPDM	95730423	55
				PTFE	95730424	76
			PVDF	FKM/EPDM	95730425	82
				PTFE	95730426	103
	5/8"	M20 x 1.5	PP	FKM/EPDM	95730427	30
			PVC	FKM/EPDM	95730428	30
				PTFE	95730429	46
			PVDF	FKM/EPDM	95730430	55
				PTFE	95730431	71
	1 1/4"	5/8"	PP	FKM/EPDM	95730432	55
			PVC	FKM/EPDM	95730433	55
				PTFE	95730434	71
			PVDF	FKM/EPDM	95730435	82
				PTFE	95730436	71
	1 1/4"	3/4"	PP	FKM/EPDM	99227512	78
			PVC	FKM/EPDM	99227511	41
			PVC	PTFE	99228197	50
			PVDF	FKM/EPDM	99227829	89
				PTFE	99227533	99
	2"	1 1/4"	PP	FKM/EPDM	99227945	88
			PVC	FKM/EPDM	99227943	88
			PVC	PTFE	99227960	97
			PVDF	FKM/EPDM	99227953	190
				PTFE	99227948	200


### Union nut kits

Two union nuts in each kit

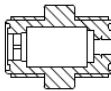

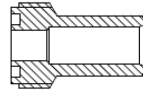
Pump Type	Threaded connection size	Material	Product number	£
DME 60 to 150	1 1/4"	PP	96633937	13
		PVDF	96633938	31
		SS	96731917	84
DME 375 and 940	2"	PP	96731916	47
		PVDF	96731915	113
		SS	96731914	186

### Union nut adaptors


Union nut adaptors consist of a rigid pipe with union nuts on both ends. They have neither gaskets nor glued or welded connections

Type	Threaded connection size		Housing material	Product number	£
	Female	Male			
	5/8"	5/8"	PVC	95730438	26
			PP	95730437	26
			PVDF	95730439	42
	1 1/4"	1 1/4"	PVC	99228665	153
			PP	99228667	103
			PVDF	99228669	225

## Hose-to-hose and hose-to-pipe adaptors

Type	Description	Connections		Housing & connections materials	Material gaskets	Product number	£
		Side 1	Side 2				
	Valve housing with 2 male threads G 5/8"	For hoses 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm		PP	FKM/EPDM	95730367	42
				PVC	FKM/EPDM	95730368	36
					PTFE	95730369	68
				PVDF	FKM/EPDM	95730370	82
					PTFE	95730371	114
		Without	PP	FKM/EPDM	95730356	28	
			PVC	FKM/EPDM	95730357	23	
				PTFE	95730358	55	
				FKM/EPDM	95730359	60	
				PTFE	95730360	92	
Without	Thrd Rp 1/4"	Stainless steel	PTFE	95730361	186		
	Pipe cementing end on one side, male thread G 5/8" on the other side	For hoses 4/6, 6/9, 6/12, 9/12 mm	Internal 12 mm dia.	PVC	FKM/EPDM	95730378	23
						PTFE	95730379
		Without	Internal 12 mm dia.	PVC	FKM/EPDM	95730365	15
						PTFE	95730366
			Pipe welding end on one side, male thread G 5/8" on the other side	For hoses 4/6, 6/9, 6/12, 9/12	External 16 mm dia.	PP	FKM/EPDM
PVDF	FKM/EPDM					95730380	60
	PTFE					95730381	76
Without	External 16 mm dia.			PP	FKM/EPDM	95730362	31
				PVDF	FKM/EPDM	95730363	47
					PTFE	95730364	63

## Elbow adaptor

Type	Threaded connection size	Body material	Product number	£
	1 1/4" internal and external thread	PVC	99168768	60

## T-pieces

Type	Description	Connections			Housing & connections materials	Material gaskets	Product number	£
		Bottom	Top	Side				
	3 male threads G 5/8"	For hoses 4/6, 6/9, 6/12, 9/12 mm		PP	FKM/EPDM	95730387	117	
				PVC	FKM/EPDM	95730388	60	
					PTFE	95730389	108	
				PVDF	FKM/EPDM	95730390	229	
					PTFE	95730391	277	
				PP	FKM/EPDM	95730346	98	
		Without		PVC	FKM/EPDM	95730347	42	
					PTFE	95730348	90	
				PVDF	FKM/EPDM	95730349	200	
					PTFE	95730350	248	
				PP	FKM/EPDM	95730397	106	
				2 male threads G 5/8", 1 female conn. with union nut	Union nut G 5/8"	Without	For hoses 4/6, 6/9, 6/12, 9/12 mm	PVC
		PTFE	95730399				82	
		PVDF	FKM/EPDM				95730400	202
		PTFE	95730401				234	
	PP	FKM/EPDM	95730351				98	
	PVC	FKM/EPDM	95730352				42	
		PTFE	95730353				74	
		PVDF	FKM/EPDM				95730354	189
			PTFE	95730355	221			

## Dosing stations and pump accessories

Fast and easy to assemble with very few tools

Direct mounting of dosing pump and suction line without needing to drill holes

Riser support plate for electric mixer

All screws and brackets available to order

Strong, high wall thickness polyethylene

### What you will need to build a tankset:

Page:

1. Dosing tank, select size and colour	see below
2. Set of mounting screws for dosing pump	56
3. Bund (optional)	56
4. Dosing pump	SMART dosing pumps
5. Dosing pump input/output cables (if necessary)	19
6. Installation kit or	18
- Rigid suction lance	42
- Injection fitting	44
- Hose	40
7. Multifunction valve (optional)	46
8. Floor mounting brackets (optional)	56
9. Electrix mixer (optional)	57
10. Hand mixer (optional)	56
10. Vent valve (optional)	56
11. Drain valve (optional)	56



## Dosing tanks

Cylindrical tanks are available in transparent or black.

They have a litre scale and a black screw cap, which can be locked

- tank material : LLDPE, UV stabilised

- liquid temperature: -20 to +45 degrees C

All cylindrical tanks are prepared for G 3/4 opening for a drain valve, and have a screw plug (PE/EPDM)

The cylindrical tanks with volumes of 60, 100, 200, 300 and 500 litres additionally include:-

- threaded M6 inserts for the assembly of a SMART Digital, a DDI, or a DMX model 221 dosing pump

- A G 2 opening for a suction lance or a foot valve, closed with a screw plug

- A flange for an electric mixer with threaded inserts

- Threaded M6 inserts at the bottom part for floor mounting with a set of floor mounting brackets

Colour	Tank volume	Suitable	Diameter	Max. height	Max. immersion depth	Weight	Product	£
		for agitator						
transparent	40	-	420	420	350	3.4	96688081	258
	60	-	460	590	545	5.5	98148805	204
		yes	"	"	"	5.5	98150038	317
	100	-	460	840	795	7.5	98149057	268
		yes	"	"	"	7.5	98150051	405
	200	-	670	810	770	11.5	98149215	387
		yes	"	"	"	11.5	98150053	573
	300	-	670	1080	1040	13	98149245	474
		yes	"	"	"	13	98150055	704
	500	-	790	1235	1175	28	98149266	908
yes		"	"	"	28	98150057	1,268	
1000	-	1080	1260	1150	40	96688086	2,468	
	yes	"	"	"	48	98173675	3,360	
black	40	-	420	420	350	3.4	95701166	269
	60	-	460	590	545	5.5	98149053	235
		yes	"	"	"	5.5	98150040	359
	100	-	460	840	795	7.5	98149082	305
		yes	"	"	"	7.5	98150052	463
	200	-	670	810	770	11.5	98149224	443
		yes	"	"	"	11.5	98150054	653
	300	-	670	1080	1040	13	98149252	540
		yes	"	"	"	13	98150056	804
	500	-	790	1235	1175	28	98149269	1,038
		yes	"	"	"	28	98150058	1,450
	1000	-	1080	1260	1150	40	95706305	2,839
		yes	"	"	"	48	98173752	3,571



## Square tank, 100 litres

The closed, square tank has a screw cap and a mounting platform for one pump or two pumps in parallel. Pump mounting platform is higher than the screw cap to protect pumps and connections when filling chemicals.

- Tank material | : MDPE
- Weight: 15 kg
- Wall thickness: 4 mm
- Liquid temperature: -20 degs C to +45 degs C

SMART Digital pumps can be fitted directly on mounting platform by means of brass inserts moulded into the platform.

The square tank is prepared for a G 3/4 drain valve.

When using a rigid suction line in the tank, choose the counter nut for fixing (see Accessories for suction lances)

Tank volume	Product number	£
100	96489271	237

## Bund

The catchment tray is available in several sizes to suit the respective tank size. It collect chemicals that might leak out of the tank, and protects the environment. Material: PE. Colour: transparent

For tank size	Volume	Dimensions (diameter x height) [mm]	Product number	£
75 litre	80 litre	500 x 545	96726831	288
100 litre	120 litre	500 x 700	96726832	356
200 litre	210 litre	770 x 595	98150059	553
300 litre	400 litre	770 x 960	96726834	890
500 litre	500 litre	860 x 980	95701272	1,299
1000 litre	1000 litre	1150 x 1080	96726836	2,242

## Accessories for dosing tanks

Description	Specification	Material	Product number	£
Drain valve for installation in the threaded sleeve of the dosing tank	Tank connection G 3/4"	PVC	96689132	120
Ventilation valve	Spring loaded, operating pressure 0.05 bar	PVC/FKM/glass	96694401	24
Dissolving hopper for washing powders into the dosing tank	With DN40 through-bolt for connection at the dosing tank, connection thread with DN20 adhesive coupling on the side for connection at 25 x 1.9 mm PVC pipe for water		96726979	1,195
Hand mixer for mixing chemicals in a tank	Shaft length 1200 mm, can be adapted to the tank, with DN15 through bolt for connecting to tank	PE	98133793	91
Set of floor mounting brackets	4 floor mounting brackets with fixing screws		98149921	38
Set of screw for mounting a SMART digital pump on a 60 to 500 litre cylindrical tank	for pump types DDA, DDC, DDE, DDI, DMX model 221	Stainless steel	98159495	17
Set of screws for mounting a SMART digital pump on a 100 litre square tank	for pump types DDA, DDC, DDE	Stainless steel	95730862	17
Set of screws for mounting a pump on a 40 litre or a 10000 litre tank	for pump types DDA, DDC, DDE, DDI, DMX model 221	PP	95730864	17

## Dosing tank electric agitators

Electric mixers from Grundfos are intended for the mixing and dissolving of liquid, non-abrasive, non flammable and non-explosive chemicals

An electric mixer ensures that the liquid in the dosing tank is mixed consistently.

The mixers run at 1500 rpm with a net frequency of 50 Hz, and are suitable for liquids with low to medium viscosity.

Min./Max. ambient temperature: 0 °C to +40 °C

• Min./Max. liquid temperature: -10 °C to +45 °C

– Dosing medium must be in the liquid phase.

• Max. relative humidity (non-condensing):

70 % at 40 °C, 90 % at 35 °C

• Max. altitude above sea level: 1000 m

• Max. viscosity: 100 mPas with 90 W, 250 mPas with 250 W, 550 W

The following versions are available:

- 6 shaft lengths suitable for cylindrical Grundfos PE tanks with volumes between 60 l and 1000 l
- 3 propeller sizes
- Single-phase or 3-phase motors in 3 power sizes
- Stainless-steel shaft with PP propeller as a standard
- PP-coated stainless-steel shaft with PP propeller
- PP-coated stainless-steel shaft with PP motor sealing

### Single phase motors, 230 V, IP65, F

Single phase

Tank volume	Colour	Tank Part No.	Tank Description (see Dosing Tanks above)	Materials	kW	Product number	£
40 l	white	96688081	do not use				
	black	95701166	electric mixer				
60 l	white	98150038			0.09	98164569	909
	black	98150040					
100 l	white	98150051			0.09	98164606	933
	black	98150052					
200 l	white	98150053	tank prepared, for direct mixer assembly	Stainless steel shaft and impellor	0.25	98164987	957
	black	98150054					
300 l	white	98150055			0.25	98165172	1,029
	black	98150056					
500 l	white	98150057			0.25	98165253	1,101
	black	98150058					
1000 l	white	98173675	with reinforced beam, for		0.55	98165287	1,220
	black	98173752	direct mixer assembly				
40 l	white	96688081	do not use				
	black	95701166	electric mixer				
60 l	white	98150038			0.09	98164573	1,005
	black	98150040					
100 l	white	98150051			0.09	98164607	1,029
	black	98150052					
200 l	white	98150053	tank prepared, for direct mixer assembly	PP shaft and impellor	0.25	98164990	1,053
	black	98150054					
300 l	white	98150055			0.25	98165175	1,125
	black	98150056					
500 l	white	98150057			0.25	98165258	1,196
	black	98150058					
1000 l	white	98173675	with reinforced beam, for		0.55	98165290	1,316
	black	98173752	direct mixer assembly				
40 l	white	96688081	do not use				
	black	95701166	electric mixer				
60 l	white	98150038			0.09	98164575	1,412
	black	98150040					
100 l	white	98150051			0.09	98164609	1,436
	black	98150052					
200 l	white	98150053	tank prepared, for direct mixer assembly	PP shaft and impellor with PP sealing flange	0.25	98165152	1,460
	black	98150054					
300 l	white	98150055			0.25	98165177	1,531
	black	98150056					
500 l	white	98150057			0.25	98165259	1,603
	black	98150058					
1000 l	white	98173675	with reinforced beam, for		0.55	98165304	1,723
	black	98173752	direct mixer assembly				

## CATEGORY 5 - DOSING PUMP ACCESSORIES

### Dosing tank electric mixers

Three phase motors, 380-415 V, IP65, F

3 phase

Tank volume	Colour	To fit tank	Tank Description (see Dosing Tanks above)	Materials	kW	Product number	£	
40 l	white	96688081	do not use electric mixer	Stainless steel shaft and impellor				
	black	95701166						
60 l	white	98150038	tank prepared, for direct mixer assembly		0.09	98165309	802	
	black	98150040						
100 l	white	98150051			0.09	98165355	825	
	black	98150052						
200 l	white	98150053			0.25	98165385	921	
	black	98150054						
300 l	white	98150055			0.25	98165393	993	
	black	98150056						
500 l	white	98150057			0.25	98165435	1,065	
	black	98150058						
1000 l	white	98173675			with reinforced beam, for direct mixer assembly	0.55	98165439	1,196
	black	98173752						
40 l	white	96688081	do not use electric mixer	PP shaft and impellor				
	black	95701166						
60 l	white	98150038	tank prepared, for direct mixer assembly		0.09	98165310	897	
	black	98150040						
100 l	white	98150051			0.09	98165357	921	
	black	98150052						
200 l	white	98150053			0.25	98165386	1,017	
	black	98150054						
300 l	white	98150055			0.25	98165432	1,089	
	black	98150056						
500 l	white	98150057			0.25	98165436	1,160	
	black	98150058						
1000 l	white	98173675			with reinforced beam, for direct mixer assembly	0.55	98165440	1,292
	black	98173752						
40 l	white	96688081	do not use electric mixer	PP shaft and impellor with PP sealing flange				
	black	95701166						
60 l	white	98150038	tank prepared, for direct mixer assembly		0.09	98165318	1,304	
	black	98150040						
100 l	white	98150051			0.09	98165382	1,328	
	black	98150052						
200 l	white	98150053			0.25	98165391	1,424	
	black	98150054						
300 l	white	98150055			0.25	98165433	1,495	
	black	98150056						
500 l	white	98150057			0.25	98165437	1,567	
	black	98150058						
1000 l	white	98173675			with reinforced beam, for direct mixer assembly	0.55	98165451	1,699
	black	98173752						

### Pump adaptor plates for tank mounting

Made of black HD-PE, including stainless steel screws and washers

Description	Pump type	Tank Size [l]	Contents	Product number	£
2 pumps on 1 tank	SMART S, DMX 221, DDI	60-500	1 adapter plate, 12 screws & washers	98982080	151
1 pump on 1 tank	DMX 226 or DMH 251-253	200-500	1 adapter plate, 8 screws & washers	99211241	153

For assembly of one of the above pump types

With installation material for wall mounting and pump mounting

Pump type	Material	Product number	£
DMX 221, DDI	PP	91836471	308
SMART XL, DMX 226 or DMH 251-253, DME 60-10 / 150-4	PE	99211245	278

## CONDITIONS OF SALE AND SERVICE

The Customer's attention is particularly drawn to the provisions of condition 13 (Warranty and Limitation of Liability)

### 1. INTERPRETATION

- 1.1 The definitions and rules of interpretation in this condition apply in these Conditions.
- Agreement:** the contract between Grundfos and the Customer for the supply of Equipment and/or Services in accordance with the Order and these Conditions
- Business Day:** a day other than a Saturday, Sunday or bank or public holiday in England when banks in London are open for non-automated business.
- CDM Regulations: the Construction (Design and Management) Regulations 2015
- Conditions:** these terms and conditions as amended from time to time in accordance with condition 19.
- Customer:** the person, firm or company who purchases Equipment and/or Services from Grundfos.
- Data Protection Legislation:** all legislation and regulatory requirements in force from time to time relating to the use of personal data and the privacy of electronic communications, including, without limitation (i) any data protection legislation from time to time in force in the UK including the Data Protection Act 2018 or any successor legislation, as well as (ii) the General Data Protection Regulation (EU) 2016/679) and any other directly applicable European Union regulation relating to data protection and privacy (for so long as and to the extent that the law of the European Union has legal effect in the UK).
- Delivery Location:** the location set out in the Order for delivery of the Equipment and/or Services or such other location as the parties may agree.
- Equipment:** all equipment, materials, goods and/or products, or any part or parts thereof, supplied by Grundfos to the Customer under this Agreement or used by Grundfos or its subcontractors in the supply of the Services.
- Equipment Specification:** any specification for the Equipment, including any relevant plans or drawings, that is agreed in writing by the Customer and Grundfos.
- Event of Default:** any occurrence of the events set out in condition 17.1 or 17.2.
- Force Majeure Event:** acts, events, omissions or accidents beyond its reasonable control, including (without limitation) strikes, lock-outs or other industrial disputes (whether involving any supplier, contractor or agent of Grundfos or any other party beyond its reasonable control), failure of a utility service or transport network, act of God, war or threat of war, sabotage, riot, civil commotion, malicious damage, compliance with any law or governmental order, rule, regulation or direction, import or export embargoes, accident, breakdown of plant or machinery, fire, flood, storm or default of suppliers or subcontractors, difficulties in obtaining raw materials, labour, fuel, parts or machinery.
- Grundfos:** Grundfos Pumps Limited (Company No: 00805960) whose registered office is at Grovebury Road, Leighton Buzzard, Bedfordshire LU7 4TL.
- Health and Safety File:** the health and safety file required by the CDM Regulations.
- In-put Material:** all documents, information, tools and materials of the Customer required by Grundfos for the proper provision of the Services.
- Intellectual Property Rights:** patents, rights to inventions, copyright and related rights, trade marks, business names and domain names, rights in get-up, goodwill and the right to sue for passing off, rights in designs, database rights, rights to use, and protect the confidentiality of, confidential information (including know-how), and all other intellectual property rights, in each case whether registered or unregistered and including all applications and rights to apply for and be granted, renewals or extensions of, and rights to claim priority from, such rights and all similar or equivalent rights or forms of protection which subsist or will subsist now or in the future in any part of the world.
- Maintenance Schedule:** the maintenance schedule attached to the Order setting out the Services to be supplied by Grundfos to the Customer.
- Order: the service support agreement or site visit request form in each case on Grundfos' standard terms (whichever is applicable) including any schedules attached to the service support agreement or site visit request form.
- Payment Schedule:** the payment schedule attached to the Order setting out the charges applicable for the provision of the Services by Grundfos to the Customer.
- Premium Service:** the service package in accordance with Grundfos' terms as set out in the Agreement.
- Quotation: a written quotation issued by Grundfos.
- Services:** the services to be provided by Grundfos under this Agreement as set out in the Order or site visit request form together with any other services which Grundfos provides, or agrees to provide, to the Customer.
- Site visit request form:** Grundfos' Site Visit and Commissioning Request Form, or the equivalent internet log, which the Customer completes.
- Time and Materials Rate: the rates set out in the Order.
- Warranty:** (Subject to condition 5.5) the warranty provided by Grundfos in respect of the Services as set out in condition 8.4 and Equipment as set out in condition 5.1 of these Conditions (as applicable).
- Warranty Period:** for product codes UPS2, UPS3, ALPHA1, ALPHA2, ALPHA3 and SCALIA2 the warranty period shall be 5 years from the date of the manufacture and in all other cases the warranty period shall be 24 months from installation or 30 months from the date of manufacture (whichever expires soonest).
- Headings in these conditions shall not affect their interpretation.
- 1.2 A person includes a natural person, corporate or unincorporated body (whether or not having separate legal personality).
- 1.3 The schedules and annexes form part of this Agreement.
- 1.4 A reference to writing or written includes fax and email and electronic chat messages.
- 1.5 Any obligation in this Agreement on a person not to do something includes, without limitation, an obligation not to agree, allow, permit or acquiesce in that thing being done.
- 1.6 References to schedules and annexes are to the schedules and annexes of the Order.
- 1.7 A reference to a statute or statutory provision is a reference to it as amended or re-enacted. A reference to a statutory provision includes all subordinate legislation made under that statute or statutory provision.
- 1.8
2. **Basis of Agreement**
- 2.1 The Order constitutes an offer by the Customer to purchase Equipment and/or Services in accordance with these Conditions.
- 2.2 The Order shall only be deemed to be accepted on the earlier of:
- (a) an authorised representative of Grundfos issues written acceptance of the Order; or
- (b) Grundfos delivers the Equipment and/or commences providing Services to the Customer in line with the Order, at which point and on which the date this Agreement shall come into existence.
- 2.3 Any samples, drawings, descriptive matter or advertising issued by Grundfos and any descriptions of the Equipment or illustrations or descriptions of the Services contained in Grundfos' catalogues or brochures are issued or published for the sole purpose of giving an approximate idea of the Services and/or Equipment described in them.

No warranty or guarantee is given for their accuracy and they shall not form part of this Agreement or have any contractual force.

- 2.4 These Conditions shall:
- (a) apply to and be incorporated into this Agreement;
- (b) prevail over any other terms that the Customer seeks to impose or incorporate; and
- (c) prevail over any terms or conditions implied by law, trade custom, practice or course of dealing between Grundfos, the Customer or otherwise.
- 2.5 These Conditions are subject to any terms, conditions and/or provisions set out in the Order. In the event of any conflict between the terms of these Conditions and the terms of the Order, the provisions of the Order shall prevail, but any special terms granted in respect of any one Order are not applicable to any subsequent Order without the express consent in writing by Grundfos.
- 2.6 Quotations shall only be valid if issued in writing.
- 2.7 Any Quotations are given on the basis that no Agreement shall come into existence except in accordance with condition 2.2. Any Quotation is valid for a period of 30 days from its date (unless otherwise agreed by Grundfos), provided that Grundfos has not previously withdrawn it.
- 2.8 All of these Conditions shall apply to the supply of both Equipment and Services except where application to one or the other is specified.
- 2.9 Any special terms agreed to by Grundfos for any Order shall not apply to any subsequent Order without the express agreement of an authorised representative of Grundfos.
- 2.10 The Customer is responsible for ensuring the accuracy of the terms of the Order and for providing to Grundfos in good time any necessary information required by Grundfos to enable Grundfos to perform its obligations under the Agreement.
- 2.11 Grundfos' minimum order value is £55.00. Orders between £55.00 and £335 for pumps or £130 for Category 4 items will be subject to a £37 handling fee.
3. **Equipment**
- 3.1 The Equipment is described in Grundfos' catalogues as modified in any Equipment Specification.
- 3.2 Unless confirmed in writing by Grundfos, Grundfos makes no representation as to the suitability of the Equipment for the Customer's particular purpose. The Customer will be responsible for ensuring that the Equipment is suitable for its particular purpose and Grundfos shall have no liability to the Customer if the Equipment is not suitable for the Customer's particular purpose (so far as legally possible).
- 3.3 Grundfos (and/or its subcontractors, suppliers or agents) reserves the right to:
- (a) change the design, construction or composition of the Equipment or the materials or equipment used in the Equipment as it shall think fit; and
- (b) amend the Equipment Specification of the Equipment if required by any applicable statutory requirements, and shall, in any case, notify the Customer of any such changes (if such changes are effected after this Agreement has come into existence but before the Equipment and/or Services have been fully performed).
- 3.4 Samples of Equipment are available for inspection at Grundfos' offices. The samples are ex-stock at the time of viewing and are without guarantee as to colour or dimensions at the time of delivery. The viewing of a sample does not create a sale by sample.
4. **Delivery of Equipment**
- 4.1 Grundfos shall deliver the Equipment to the Delivery Location.
- 4.2 Delivery of the Equipment shall be completed on:
- (a) the completion of unloading of the Equipment at the Delivery Location or (in the absence of any specified Delivery Location by the Customer) upon Grundfos informing the Customer that the Equipment is ready; or
- (b) (if the Customer or its agents and/or representatives elect to unload the Equipment themselves) upon Grundfos placing the Equipment at the disposal of the Customer, its agents or representatives at the agreed point.
- 4.3 Grundfos' obligation under condition 4.1 is limited to delivering the Equipment only as near to the Delivery Location as a safe hard road permits. The Customer is to provide to Grundfos, free of charge, reasonable assistance with unloading (unless the Customer elects to unload the Equipment itself).
- 4.4 Any dates quoted for delivery of the Equipment are approximate only, and the time of delivery is not of the essence. Grundfos shall not be liable for any delay (or any additional costs arising out of the delay) in delivery of the Equipment that is caused by a Force Majeure Event or the Customer's failure to provide Grundfos with adequate delivery instructions or any other instructions that are relevant to the supply of the Equipment.
- 4.5 The Equipment may be delivered in advance of the quoted delivery date upon giving reasonable notice to the Customer.
- 4.6 If the Customer fails to take delivery of the Equipment or fails to give Grundfos adequate delivery instructions at the time stated for delivery (otherwise than by reason of Grundfos' sole fault) then, without prejudice to any other right or remedy available to Grundfos:
- (a) delivery of the Equipment shall be deemed to have been completed at 9.00am on the next Business Day following the day on which Grundfos notified the Customer that the Equipment was ready; and
- (b) Grundfos may:
- (i) Charge a re-delivery fee if delivery is rearranged by Grundfos and the Customer;
- (ii) store the Equipment until actual delivery takes place, and charge the Customer for all related costs and expenses (including insurance) of such storage;
- (iii) apply Grundfos' returns policy as set out in condition 6; or
- (iv) sell the Equipment at the best price readily obtainable and (after deducting all reasonable storage and selling expenses) charge the Customer for any shortfall below the price payable by the Customer for the Equipment and Services (as applicable) under this Agreement.
- 4.7 If the parties have agreed on express delivery, the dates quoted for such delivery and agreed delivery dates are approximate only as delivery may vary due to factors not within Grundfos' reasonable control, e.g. leisurely or delayed customs clearance or other import or export obstacles. The parties agree that time of delivery is not of the essence and that Grundfos shall not be liable for any delay (or any additional costs arising out of the delay) in delivery caused by such events.
- 4.8 Grundfos may deliver the Equipment by instalments.
- 4.9 If Equipment is not received by the customer within 7 days of notification of dispatch by Grundfos or if it is received in a damaged condition or the quantity received differs from the quantity advised by Grundfos the Customer shall notify Grundfos in writing. If such written notice is not received by Grundfos within 10 days of the date of Grundfos' dispatch notification, Grundfos will not be liable in respect of any loss or damaged suffered.
- 4.10 If a proof of delivery is required a £10 handling fee will apply.
- 4.11 Proof of delivery shall only be retained by Grundfos for 3 months following delivery. After 3 months it shall be assumed by both parties that delivery successfully took place unless there is evidence to the contrary.
- 4.12 A £20 handling fee will apply per order to all orders for spares, pump components, spares kits and ancillary items such as flanges, unions etc.

5. **Quality of Equipment**
- 5.1 For the duration of the Warranty Period, Grundfos warrants that the Equipment shall:
- (a) (subject to conditions 5.3 and 5.4) conform in all material respects with the Equipment Specification; and
- (b) be free from defects in design, material and workmanship.
- 5.2 Subject to condition 5.3, if:
- (a) the Customer gives notice in writing during the Warranty Period within 14 days of discovery that some or all of the Equipment does not comply with the Warranty set out in condition 5.1;
- (b) Grundfos is given a reasonable opportunity to examine such Equipment; and
- (c) the Customer (if reasonably asked to do so by Grundfos) returns such Equipment to Grundfos (at Grundfos' cost), then Grundfos shall, at its option, repair or replace the defective Equipment, or refund the price of the defective Equipment in full. Repairs shall only be carried out between 8am and 5pm on Business Days agreed between Grundfos and Customer.
- 5.3 Grundfos shall not be liable for the Equipment's failure to comply with the Warranty if:
- (a) the Customer makes any further use of such Equipment after giving a notice in accordance with condition 5.2 unless otherwise approved by Grundfos (such approval not to be withheld unreasonably);
- (b) the defect arises because the Customer failed to follow Grundfos' or manufacturer's oral or written instructions as to the storage, installation, commissioning, use or maintenance of the Equipment or (if there are none) good trade practice;
- (c) the defect arises as a result of Grundfos following any drawing, design supplied by the Customer or the Equipment Specification;
- (d) the Customer alters, dismantles or repairs such Equipment without the written consent of Grundfos;
- (e) the defect arises as a result of fair wear and tear, wilful damage, negligence, or abnormal working conditions; or
- (f) the Equipment differs from its description as a result of changes made to ensure they comply with applicable statutory or regulatory standards.
- 5.4 Except as provided in this condition 5, Grundfos shall have no liability to the Customer in respect of the Equipment's failure to comply with the Warranty.
- 5.5 The terms of these Conditions shall apply to any repaired or replacement Equipment supplied by Grundfos under condition 5.2 but for the avoidance of doubt, the Warranty Period for any repaired or replaced Equipment shall be 12 months from the date of the repair.
6. **Return of Equipment**
- 6.1 Equipment may not be returned to Grundfos except by the prior written permission of an authorised representative of Grundfos. Contact grundfos-uk@sales.grundfos.com with the original purchase order number to arrange a return. Any such return shall be liable for any handling and restocking fees charged by Grundfos.
- 6.2 All Equipment requested to be returned to Grundfos will be subject to a minimum 35% restocking fee (subject to inspection). Equipment must be returned in its original packaging.
- 6.3 Equipment can only be returned within 6 months of the date of dispatch by Grundfos. All returns will be subject to inspection to ascertain age, condition and type.
- 6.4 Equipment returned without prior authorisation will be refused delivery by Grundfos.
- 6.5 The following Equipment cannot be returned for credit in any circumstance:
- (a) items with a net value of less than £125 (per item);
- (b) repair kits, power cable, engineered to order, third party sourced and obsolete items.
- 6.6 Any Equipment that has been in contact with hazardous liquids must be cleaned, sealed in appropriate packaging, clearly labelled and accompanied by a COSHH certification by the Customer. Any carrier used must be licensed to carry to transport the relevant hazardous liquids.
7. **Title and Risk**
- 7.1 The risk in the Equipment shall pass to the Customer on completion of delivery in accordance with condition 4.
- 7.2 Title to the Equipment shall not pass to the Customer until Grundfos receives payment in full (in cash or cleared funds) for the Equipment and any other equipment or goods that Grundfos has supplied to the Customer in respect of which payment has become due in which case title to the Equipment shall pass at the time of payment of all such sums.
- 7.3 Until title to the Equipment has passed to the Customer, the Customer shall:
- (a) hold the Equipment (or any receipts received from the Customer where the Customer has sold the Equipment) on a fiduciary basis as Grundfos' bailee;
- (b) store the Equipment separately from all other goods held by the Customer (where possible) so that they remain readily identifiable as Grundfos' property;
- (c) not remove, deface or obscure any identifying mark or packaging on or relating to the Equipment (unless reasonably required for the functioning use of the Equipment by the Customer);
- (d) maintain the Equipment in satisfactory condition and keep it insured against all risks for their full price on Grundfos' behalf from the date of delivery;
- (e) notify Grundfos immediately if the Customer becomes subject to any Event of Default;
- (f) give Grundfos such reasonable information relating to the Equipment as Grundfos may require from time to time;
- (g) give Grundfos at least 30 days' notice of its intention to move or relocate the Equipment to a new location. Grundfos may (at Grundfos' sole discretion) supervise the dismantling and removal of the Equipment, and inspect and reinstall the Equipment at the new location. Any supervision and work undertaken in respect of the relocation shall be charged at the prevailing Time and Material Rates and is payable by the Customer in accordance with condition 11; and
- (h) give Grundfos at least 14 days' notice of its intention to take any steps to appoint an administrator.
- 7.4 The Customer may incorporate the Equipment into or with any other goods provided that any new goods incorporating the Equipment shall become the sole and exclusive property of Grundfos and shall be separately stored and marked so as to be identifiable as being manufactured by or containing Equipment belonging to Grundfos.
- 7.5 Subject to condition 7.7, the Customer may resell the Equipment in the ordinary course of its business (but not otherwise) before Grundfos receives payment for the Equipment. However, if the Customer resells the Equipment before that time:
- (a) It does so as principal and not as Grundfos' agent;
- (b) Title to the Equipment shall pass from Grundfos to the Customer immediately before the time at which resale by the Customer occurs.
- 7.6 If before title to the Equipment passes to the Customer the Customer becomes subject to an Event of Default, then, without limiting any other right or remedy Grundfos may have, Grundfos may at any time:
- (a) the Customer's right to resell the Equipment or use it in the ordinary course of its business ceases immediately;
- (b) reasonably require the Customer to deliver up all Equipment in its possession; and
- (c) if the Customer fails to do so promptly, enter any premises of the Customer where the Equipment is stored in order to recover them; and
- (d) the Customer shall pay Grundfos' reasonable costs (including legal costs) for any recovery of the Equipment pursuant to condition 7.7(c).
8. **Supply of Services**
- 8.1 Grundfos shall provide the Services to the Customer in accordance with the Maintenance Schedule in all material respects and in accordance with the duration and timescales specified in the Order.
- 8.2 Grundfos shall use all reasonable endeavours to meet any performance dates for the Services specified in this Agreement, but any such dates shall be estimates only and time shall not be of the essence for the performance of the Services.
- 8.3 Grundfos shall have the right to make any changes to the Services which are necessary to comply with any applicable law or safety requirement, or which do not materially affect the nature or quality of the Services, and Grundfos shall notify the Customer in any such event. If Grundfos requests a change for any other reason, the Customer shall not unreasonably withhold or delay consent to it.
- 8.4 Grundfos warrants to the Customer that the Services will be provided using reasonable care and skill.
- 8.5 Grundfos shall use reasonable endeavours to observe all health and safety rules and regulations, and any other reasonable security requirements that apply at the Customer's premises and that have been communicated to it provided that it shall not be liable under this Agreement if, as a result of such observation, it is in breach of any of its obligations under this Agreement.
9. **Maintenance Service Times**
- 9.1 Services will be carried out during the working times as specified in the Maintenance Schedule.
- 9.2 Grundfos' standard daily fee rates for each individual person are calculated on the basis of an eight-hour day between 8.00am and 5.00pm on Business Days. Grundfos shall be entitled to charge for any Services undertaken outside of these hours at the Time and Materials Rate in effect at the relevant time.
- 9.3 Grundfos shall use reasonable endeavours to attend the Delivery Location, but if Grundfos is prevented by any reason outside his control or under the control of the Customer, from installing the Equipment or carrying out the Services at the time of the visit, it shall not constitute a material breach of this Agreement. If additional visits are required to the Delivery Location which are not accounted for in the Maintenance Schedule, Grundfos reserves the right to charge the Customer at the Time and Materials Rate for all additional time incurred.
10. **Customer's obligations**
- 10.1 The Customer shall:
- (a) ensure that the terms of the Order and the Equipment Specification are complete and accurate;
- (b) co-operate with Grundfos in all matters relating to this Agreement;
- (c) provide Grundfos, its employees, agents, consultants and subcontractors, with access to the Customer's premises, office accommodation and other facilities as reasonably required by Grundfos to provide the Services and/or deliver the Equipment;
- (d) prepare the Customer's premises (or the location where the Services are to be performed) for the supply of the Services and/or the Equipment;
- (e) provide adequate lighting, heating, power and ventilation as per Grundfos' reasonable requirements;
- (f) inform Grundfos' engineer or representative on each visit about any unsatisfactory running or irregular performance of the Equipment or equipment in respect of which the Services are undertaken.
- (g) ensure the Equipment is installed and kept in suitable premises and under suitable conditions, permit only trained and competent personnel to use it and follow any operating instructions as Grundfos may give from time to time;
- (h) provide a site visit request form to Grundfos in respect of any Services to be carried out by Grundfos, its agents, subcontractors, consultants or employees (as the case may be);
- (i) provide to Grundfos, in a timely manner, such In-put Material and other information as Grundfos may require and ensure that it is accurate in all material respects;
- (j) be responsible (at its own cost) for preparing and maintaining the relevant premises for the supply of the Services and/or Equipment, including identifying, monitoring, removing and disposing of any hazardous materials from its premises in accordance with all applicable laws, before and during the supply of the Services and/or Equipment at those premises;
- (k) inform Grundfos of all health and safety rules and regulations and any other reasonable security requirements that apply at the Customer's premises;
- (l) ensure that all In-Put Materials are in good working order and suitable for the purposes for which it is used in relation to the Services;
- (m) keep all Grundfos' materials, equipment, documents and other property (Grundfos Property) at the Customer's premises in safe custody at its own risk, keep all Grundfos Property in good condition until returned to Grundfos and not dispose of or use the Grundfos Property other than in accordance with Grundfos' written instructions and authorisations; and
- (n) obtain and maintain all necessary licences and consents and comply with all relevant legislation in relation to the Services, the installation of the Equipment and the use of In-put Material in all cases before the date on which the Services are to start.
- 10.2 If Grundfos' performance of any of its obligations in respect of the Services is prevented or delayed by any act or omission by the Customer (including its agents, subcontractors, consultants or employees) or failure by the Customer to perform any relevant obligation (Customer Default):
- (a) Grundfos shall without limiting its other rights or remedies have the right to suspend performance of the Services until the Customer remedies the Customer Default, and to rely on the Customer Default to relieve it from the performance of any of its obligations under this Agreement to the extent the Customer Default prevents or delays Grundfos' performance of any of its obligations;
- (b) Grundfos shall not be liable for any costs or losses sustained or incurred by the Customer arising directly or indirectly from Grundfos' failure or delay to perform any of its obligations as set out in this condition 10.2; and
- (c) the Customer shall reimburse Grundfos on written demand for any costs or losses sustained or incurred by Grundfos arising directly or indirectly from the Customer Default.
- 10.3 The Customer shall be liable to pay to Grundfos, on demand, all reasonable costs, charges or losses sustained or incurred by Grundfos (including, without limitation, any direct, indirect or consequential losses, loss of profit and loss of reputation, loss or damage to property and those arising from injury to or death of any person and loss of opportunity to deploy resources elsewhere) arising directly or indirectly from the Customer's fraud, negligence, failure to perform or delay in the performance of any of its obligations under this Agreement, subject to Grundfos confirming such costs, charges and losses to the Customer in writing.

10.4	The Customer shall not, without the prior written consent of Grundfos, at any time from the date of this Agreement to the expiry of 12 months after the last date of supply of the Services, solicit or entice away from Grundfos or employ (or attempt to employ) any person who is, or has been, engaged as an employee of Grundfos in the provision of the Services.	
11.	<b>The CDM Regulations</b>	
11.1	The Customer and Grundfos agree that the Customer is to be treated for the purposes of the CDM Regulations as the Client for the purposes of the CDM Regulations.	
11.2	The Customer agrees to ensure that the Works are carried out in accordance with the CDM Regulations.	
11.3	The Customer shall ensure that the Health and Safety File is maintained correctly and is available for inspection in accordance with the CDM Regulations.	
11.4	The Customer shall indemnify and keep the Owner indemnified against liability for any breach of the Customer's obligations under or in connection with this condition 11.	
12.	<b>Charges and Payment</b>	
12.1	The price for the Equipment shall be the price set out in the Order or, if no price is quoted, the price set out in the published price list of Grundfos (or Grundfos as the case may be) as at the date of delivery. Unless otherwise stated in the Order, the price of the Equipment is exclusive of all costs and charges of packaging, insurance, transport of the Equipment, which shall be paid by the Customer when it pays for the Equipment.	13.2
12.2	In the case of Product Services Service contracts, Installation Works and Engineered to Order products Grundfos reserves the right to request a deposit payment and/or payment milestones. The amount or means of calculating such payment shall be set out in the Quotation.	13.3
12.3	Grundfos reserves the right to require (at its option) a parent company guarantee or a personal guarantee from the directors of the Customer at any time in relation to all outstanding amounts due to Grundfos from the Customer from time to time.	13.4
12.4	The charges for Services shall be set out in the Payment Schedule.	13.5
12.5	Unless stated otherwise all prices are given on a DAP (delivered at place) basis.	
12.6	Grundfos reserves the right to: (a) increase its standard daily fee rates for the Services. Grundfos will give the Customer reasonable notice in writing of any such increase before the proposed date of the increase. If such increase is not acceptable to the Customer, it shall notify Grundfos in writing within 14 days of the date of Grundfos' notice and either of Grundfos or the Customer shall have the right, without limiting its other rights or remedies, to terminate this Agreement by giving 14 days' written notice (or any other reasonable notice period if performance of the Order is due to commence within 14 days) to Grundfos or Customer (as applicable); and (b) increase the price of the Equipment, by giving notice to the Customer at any time before delivery, to reflect any increase in the cost of the Equipment to Grundfos that is due to: (i) any factor beyond the control of Grundfos (including foreign exchange fluctuations, increases in taxes and customs' charges and duties, and increases in labour, materials, fuel and other manufacturing costs); (ii) any request by the Customer to change the delivery date(s), quantities or types of Equipment ordered, or the Equipment specification; or (iii) any delay caused by any instructions of the Customer in respect of the Equipment or failure of the Customer to give Grundfos adequate or accurate information or instructions in respect of the Equipment.	14.
12.7	In respect of Equipment, Grundfos shall invoice the Customer on or at any time after completion of delivery. If delivery of the Equipment is made in instalments, Grundfos may invoice the Customer in instalments. In respect of Services, Grundfos shall invoice the Customer in accordance with the Payment Schedule.	14.1
12.8	The Customer shall pay each invoice submitted by Grundfos: (a) within 30 days of the date of the invoice or in accordance with any other payment terms agreed by Grundfos in writing; and (b) in full and in cleared funds to a bank account nominated in writing by Grundfos, and time for payment shall be of the essence of this Agreement.	14.2
12.9	All amounts payable by the Customer under this Agreement are exclusive of amounts in respect of value added tax chargeable from time to time (VAT). The Customer shall pay any VAT which is chargeable on the supply of the Services and/or Equipment at the same time as payment is due for the supply of the Services and/or Equipment.	15.
12.10	Grundfos may in its sole discretion elect to provide a credit facility to the Customer but is not obliged to do so. Any credit facility offered will be on written terms agreed by Grundfos and the Customer.	15.1
12.11	Without prejudice to any other right or remedy that it may have, if the Customer fails to pay Grundfos on the due date, Grundfos may: (a) charge interest on such sum from the due date for payment at an annual rate equal to the set rate of interest provided under the Late Payment of Commercial Debt (Interest) Act 1998 as varied from time to time accruing on a daily basis and being compounded quarterly until payment is made, whether before or after any judgment and the Customer shall pay the interest immediately on demand; (b) charge compensation for late payment at a set rate depending on the size of the debt in accordance with the Late Payment of Commercial Debt Regulations 2002 (SI 2002 No 1674). The minimum charge applicable is £40.00, the maximum applicable is £100.00; (c) appropriate any payment by the Customer to any outstanding invoice as Grundfos may think fit not withstanding any purported appropriation by the Customer; and (d) suspend the provision of further Services until payment has been made in full.	15.2
12.12	The Customer shall pay all amounts due under this Agreement in full without any set-off, counterclaim, deduction or withholding except as required by law. Grundfos may, without limiting its other rights or remedies, set off any amount owing to it by the Customer against any amount payable by Grundfos to the Customer.	15.3
12.13	All sums payable to Grundfos under this Agreement shall become due immediately on its termination, despite any other provision. This condition 12.10 is without prejudice to any right to claim for interest under the law, or any such right under this Agreement.	15.4
12.14	Grundfos shall have a lien on all of the Customer's property in Grundfos' possession for all sums due at any time by the Customer to Grundfos subject to Grundfos giving not less than one month's written notice to the Customer. Grundfos shall be entitled to use, sell and dispose of any such property as agent for the Customer at the Customer's expense. The proceeds of such sale shall be applied towards the payment of monies due to Grundfos and Grundfos shall be discharged of any liability in relation to such property as a result of any sale.	16.
13.	<b>Warranty and Limitation of Liability</b>	16.1
13.1	<i>THE CUSTOMER'S ATTENTION IS SPECIFICALLY DRAWN TO THIS CONDITION</i> Nothing in these Conditions shall limit or exclude Grundfos' liability for: (a) death or personal injury caused by its negligence, or the negligence of its employees, agents or subcontractors; (b) fraud or fraudulent misrepresentation; (c) breach of the terms implied by section 2 of the Supply of Goods and Services Act 1982 (title and quiet possession);	16.2
	(d) breach of the terms implied by section 12 of the Sale of Goods Act 1979 (title and quiet possession); or (e) defective products under the Consumer Protection Act 1987.	16.3
	Subject to condition 13.1: (a) Grundfos shall under no circumstances whatsoever be liable to the Customer, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss of profit, turnover, data, business opportunity, anticipated savings, any indirect or consequential loss or any damage to goodwill arising under or in connection with this Agreement; (b) Grundfos' total liability to the Customer where the Customer has provided Grundfos with incorrect weights, dimensions, capacity performance or other information shall in no circumstances exceed the price of the Equipment supplied in accordance with such incorrect information; and (c) Grundfos' total liability to the Customer in respect of all other losses arising under or in connection with this Agreement, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, shall in no circumstances exceed £1million.	17.
	The terms implied by sections 13 to 15 of the Sale of Goods Act 1979 and the terms implied by sections 3 to 5 of the Supply of Goods and Services Act 1982 are, to the fullest extent permitted by law, excluded from this Agreement.	17.1
	This condition 13 shall survive termination of this Agreement.	
	The Customer shall indemnify Grundfos for any costs suffered by Grundfos for claims from any third party which arise by virtue of the Customer having resold the Equipment (unless such claim arises solely from Grundfos' negligence).	
	<b>Confidentiality and Grundfos' property</b>	
	Each party (receiving party) shall keep in strict confidence all technical or commercial know-how, specifications, inventions, processes or initiatives which are of a confidential nature and have been disclosed to the receiving party by the other party (disclosing party), its employees, agents or subcontractors, and any other confidential information concerning the disclosing party's business, its products and services which the receiving party may obtain. The receiving party shall only disclose such confidential information to those of its employees, agents and subcontractors who need to know it for the purpose of discharging the receiving party's obligations under this Agreement, and shall ensure that such employees, agents and subcontractors comply with the obligations set out in this condition as though they were a party to this Agreement. The receiving party may also disclose such of the disclosing party's confidential information as is required to be disclosed by law, any governmental or regulatory authority or by a court of competent jurisdiction. Neither party shall use the other's confidential information for any purpose other than to perform its obligations under this Agreement.	
	<b>Intellectual Property Rights</b>	
	(Subject to condition 15.2) all Intellectual Property Rights in or arising out of or in connection with: (a) the Equipment; (b) the Services; or (c) any manuals or documentation given by Grundfos to the Customer, shall be owned by Grundfos and nothing in this agreement shall transfer or assign any such Intellectual Property Rights to the Customer.	
	The Customer acknowledges that, in respect of any third party Intellectual Property Rights, the Customer's use of any such Intellectual Property Rights is conditional on Grundfos first obtaining a written licence from the relevant licensor on such terms as will entitle Grundfos to license such rights to the Customer.	
	The Customer grants to Grundfos a fully paid up, non-exclusive, royalty free, non-transferable licence to copy and modify any In-put Material for the purpose of providing the Services to the Customer.	
	The Customer shall indemnify Grundfos against all liabilities, costs, expenses, damages and losses (including any direct, indirect or consequential losses, loss of profit, loss of reputation and all interest, penalties and legal costs (on a full indemnity basis) and all other reasonable professional costs and expenses) suffered or incurred by Grundfos for actual or alleged infringement of a third party's Intellectual Property Rights arising out of or in connection with Grundfos' use of the Equipment Specification.	
	<b>Data protection</b>	
	Both parties will comply with all applicable requirements of the Data Protection Legislation. This condition 16 is in addition to, and does not relieve, remove or replace, a party's obligations under the Data Protection Legislation. In this condition 16 Applicable Laws means (for so long as and to the extent that they apply to the Supplier) the law of the European Union, the law of any member state of the European Union and/or Domestic UK Law; and Domestic UK Law means any Data Protection Legislation from time to time in force in the UK including the Data Protection Act 2018 or any successor legislation.	
	Without prejudice to the generality of condition 16.1 each party shall, in relation to any Personal Data processed in connection with the performance by that party of its obligations under the Agreement: (a) ensure that it has in place appropriate technical and organisational measures to protect against unauthorised or unlawful processing of Personal Data and against accidental loss or destruction of, or damage to, Personal Data, appropriate to the harm that might result from the unauthorised or unlawful processing or accidental loss, destruction or damage and the nature of the data to be protected, having regard to the state of technological development and the cost of implementing any measures (those measures may include, where appropriate, pseudonymising and encrypting Personal Data, ensuring confidentiality, integrity, availability and resilience of its systems and services, ensuring that availability of and access to Personal Data can be restored in a timely manner after an incident, and regularly assessing and evaluating the effectiveness of the technical and organisational measures adopted by it); (b) assist the other party, at the other party's cost, in responding to any request from a Data Subject and in ensuring compliance with its obligations under the Data Protection Legislation with respect to security, breach notifications, impact assessments and consultations with supervisory authorities or regulators; (c) notify the Customer without undue delay on becoming aware of a Personal Data breach; (d) at the written direction of the other party, delete or return Personal Data and copies thereof to the other party on termination of the agreement unless required by Applicable Law to store the Personal Data; and (e) maintain complete and accurate records and information to demonstrate its compliance with this condition 16.	
	Neither party consents to the other appointing any third-party processor of Personal Data under the Contract.	
	<b>Termination</b>	
	Without limiting its other rights or remedies, Grundfos or Customer may terminate this Agreement with immediate effect by giving written notice to the other party if: (a) the other party commits a material breach of its obligations under this Agreement and (if such breach is remediable) fails to remedy that breach within 7 days after receipt of written notice to do so;	



- (b) the other party takes any step or action in connection with its entering administration, provisional liquidation or any composition or arrangement with its creditors (other than in relation to a solvent restructuring), being wound up (whether voluntarily or by order of the court, unless for the purpose of a solvent restructuring), having a receiver appointed to any of its assets or ceasing to carry on business [or, if the step or action is taken in another jurisdiction, in connection with any analogous procedure in the relevant jurisdiction];
- (c) the other party suspends, or threatens to suspend, or ceases or threatens to cease to carry on all or a substantial part of its business; or
- (d) the other party's financial position deteriorates to such an extent that in the terminating party's opinion the other party's capability to adequately fulfil its obligations under the Contract has been placed in jeopardy.
- 17.2 Without limiting its other rights or remedies, Grundfos may terminate this Agreement with immediate effect by giving written notice to the Customer if:
- (a) there is a change of control of the Customer (as defined in section 574 of the Capital Allowances Act 2001);
- (b) the Customer is unable or unwilling to procure any guarantee required by Grundfos in accordance with condition 12.3; or
- (c) the Customer's financial position deteriorates to such an extent that in Grundfos' opinion the Customer's capability to adequately fulfil its obligations under the Contract has been placed in jeopardy or Customer fails to pay any amount due under this Agreement on the due date for payment.
- 17.3 Without limiting its other rights or remedies, Grundfos may suspend the supply of Services or all further deliveries of Equipment under this Agreement or any other agreement between the Customer and Grundfos if the Customer becomes subject to an Event of Default, or Grundfos reasonably believes that the Customer is about to become subject to any of them.
- 17.4 On termination of this Agreement for any reason:
- (a) the Customer shall immediately pay to Grundfos all of Grundfos' outstanding unpaid invoices and interest and, in respect of Services supplied but for which no invoice has yet been submitted, Grundfos shall submit an invoice, which shall be payable by the Customer immediately on receipt;
- (b) the Customer shall return all of Grundfos' materials and any deliverables which have not been fully paid for and which have not been installed as part of a bigger system. If the Customer fails to do so, then Grundfos may enter the Customer's premises and take possession of them. Until they have been returned, the Customer shall be solely responsible for their safe keeping and will not use them for any purpose not connected with this Agreement;
- (c) the accrued rights and remedies of the parties as at termination shall not be affected, including the right to claim damages in respect of any breach of this Agreement which existed at or before the date of termination or expiry;
- (d) conditions which expressly or by implication have effect after termination shall continue in full force and effect; and
- (e) Grundfos shall have a lien over all of the Customer's property in Grundfos' possession in respect of all sums due at any time from the Customer to Grundfos. Provided that Grundfos gives at least 14 days' prior written notice, Grundfos shall be entitled to use, sell and dispose of such property as agent for and at the expense of the Customer and apply the proceeds towards the payment of monies due and outstanding from the Customer to Grundfos. Thereafter, Grundfos shall be discharged of any liability in respect of the Customer's property.
- 17.5 On termination of this Agreement (however arising), any of these Conditions that expressly or by implication is intended to have effect after termination (or expiry) shall survive and continue in full force and effect.
18. **Force majeure**  
Grundfos shall have no liability to the Customer under this Agreement if it is prevented from, or delayed in performing, its obligations under this Agreement or from carrying on its business by any Force Majeure Event.
19. **Variation**  
Except as provided in these Conditions, no variation of this Agreement or these Conditions or of any of the documents referred to in them shall be valid unless it is in writing and signed by or on behalf of each of the authorised representatives of the parties.
20. **Waiver**  
20.1 A waiver of any right under this Agreement is only effective if it is in writing and it applies only to the circumstances for which it is given. No failure or delay by a party in exercising any right or remedy under this Agreement or by law shall constitute a waiver of that (or any other) right or remedy, nor preclude or restrict its further exercise. No single or partial exercise of such right or remedy shall preclude or restrict the further exercise of that (or any other) right or remedy.
- 20.2 Unless specifically provided otherwise, rights arising under this Agreement are cumulative and do not exclude rights provided by law.
21. **Severance**  
21.1 If any provision of this Agreement (or part of any provision) is found by any court or other authority of competent jurisdiction to be invalid, illegal or unenforceable, that provision or part-provision shall, to the extent required, be deemed not to form part of this Agreement, and the validity and enforceability of the other provisions of this Agreement shall not be affected.
- 21.2 If a provision of this Agreement (or part of any provision) is found illegal, invalid or unenforceable, the provision shall apply with the minimum modification necessary to make it legal, valid and enforceable.
22. **Entire agreement**  
22.1 This Agreement constitutes the whole agreement between the parties and supersedes all previous agreements between the parties relating to its subject matter.
- 22.2 Each party acknowledges that, in entering into this Agreement, it has not relied on, and shall have no right or remedy in respect of, any statement, representation, assurance or warranty (whether made negligently or innocently) (other than for breach of contract), as expressly provided in this Agreement.
- 22.3 Nothing in this condition shall limit or exclude any liability for fraud.
23. **Assignment**  
23.1 The Customer shall not, without the prior written consent of Grundfos, assign, transfer, charge, mortgage, subcontract or deal in any other manner with all or any of its rights or obligations under this Agreement.
- 23.2 Grundfos may at any time assign, transfer, charge, mortgage, subcontract or deal in any other manner with all or any of its rights under this Agreement and may subcontract or delegate in any manner any or all of its obligations under this Agreement to any third party or agent.
- 23.3 Each party that has rights under this Agreement is acting on its own behalf and not for the benefit of another person.
24. **No partnership or agency**  
Nothing in this Agreement is intended to, or shall be deemed to, constitute a partnership or joint venture of any kind between any of the parties, nor constitute any party the agent of another party for any purpose. No party shall have authority to act as agent for, or to bind, the other party in any way.
25. **Rights of third parties**  
A person who is not a party to this Agreement shall not have any rights under or in connection with it.
26. **Notices**  
26.1 Any notice required to be given under this Agreement shall be in writing and shall be delivered personally, or sent by pre-paid first-class post, recorded delivery or by commercial courier to the registered office or the address stated in the Order (or as otherwise notified to the other party in writing).
- 26.2 Any notice shall be deemed to have been duly received if delivered personally, when left at the correct address or, if sent by pre-paid first-class post or recorded delivery, at 9.00am on the second Business Day after posting, or if delivered by commercial courier, on the date and at the time that the courier's delivery receipt is signed.
- 26.3 This condition 26 shall not apply to the service of any proceedings or other documents in any legal action.
- 26.4 A notice required to be given under this Agreement shall also be validly served if sent by e-mail.
27. **Governing law and jurisdiction**  
27.1 This Agreement, and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims), shall be governed by, and construed in accordance with, the law of England and Wales.
- 27.2 The parties irrevocably agree that the courts of England and Wales shall have exclusive jurisdiction to settle any dispute or claim that arises out of, or in connection with, this Agreement or its subject matter or formation (including non-contractual disputes or claims).

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**GRUNDFOS** 