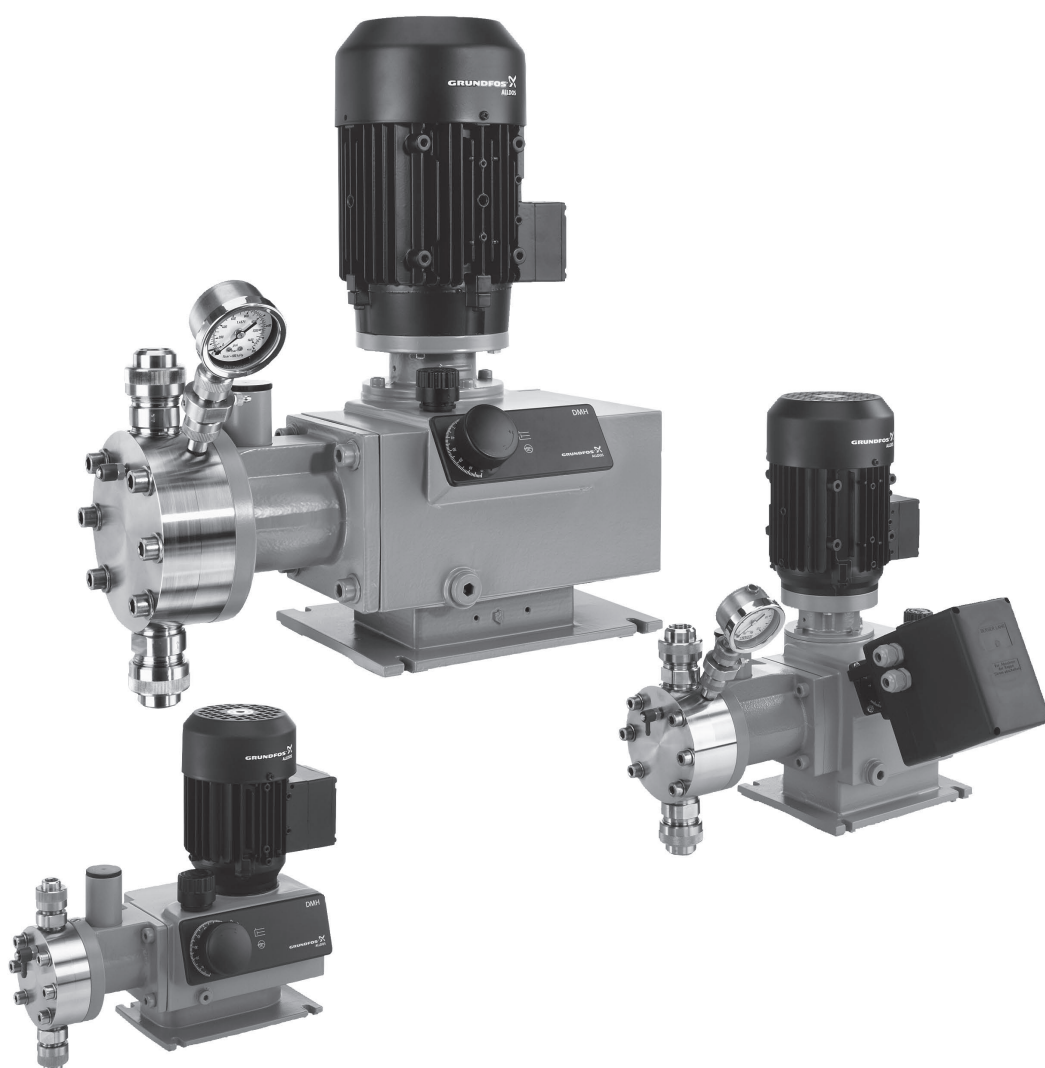
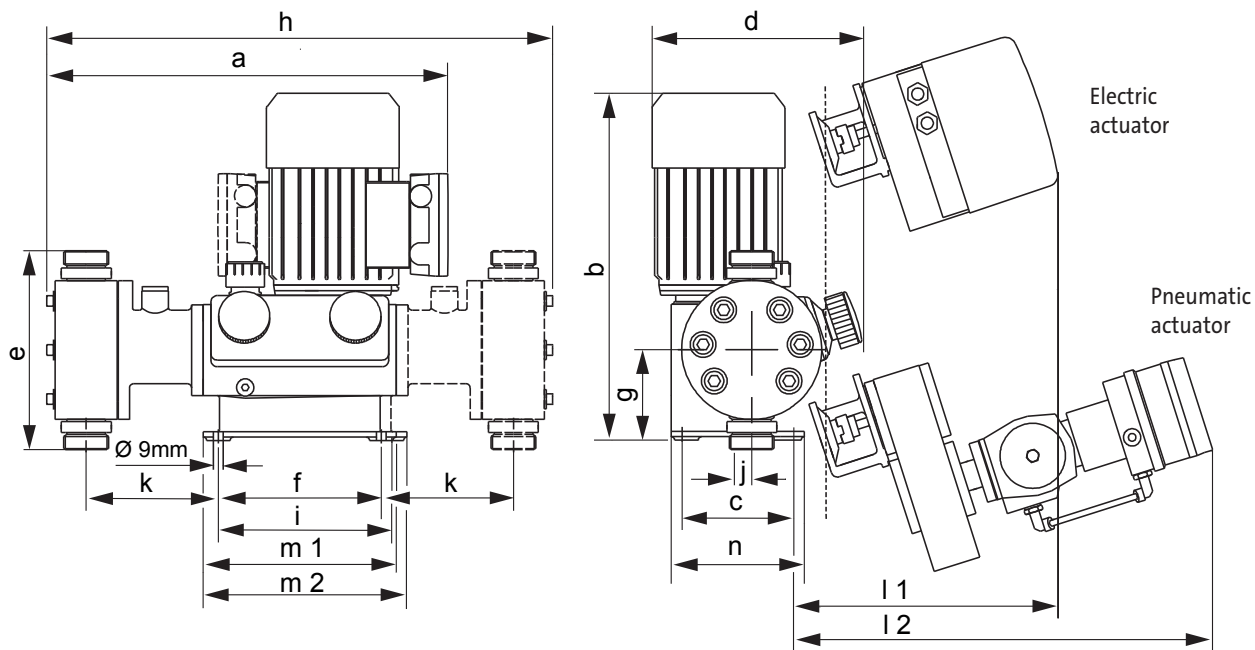


DMH 28x

The solution for complex dosing tasks



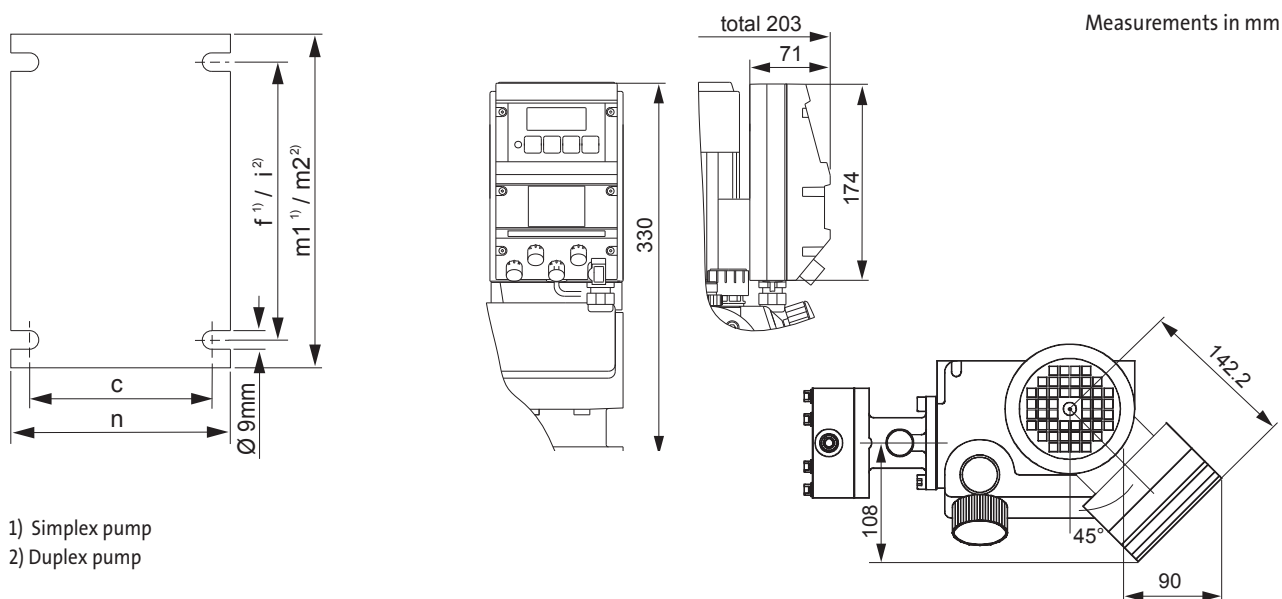
Measurements



DMH model	Measurements in mm															
	a	b	c	d	e	f	g	h	i	j	k	l1	l2	n	m1	m2
280	365	336	97.5	192	142	152	85.5	465	152	16	114	230	432	117.5	180	180
281	348	336	97.5	192	155	152	85.5	432	152	16	114	250	432	117.5	180	180
283	437	493	156	254	211	185	126	706	260	10	182	235	413	180	225	300
285	510	553	145.5	274	179	240	129	820	333	25	187	245	420	194.5	290	382
286	510	553	145.5	274	234	240	129	820	333	25	191	245	420	194.5	290	382
287	490	553	170	274	208	240	129	814	333	25	176	245	420	194.5	290	382
288	425	492	156	155.5	208	185	126	700	260	10	173	235	413	180	225	300

Drilling scheme

Etron Profi for DMH model 280 and 281



- 1) Simplex pump
- 2) Duplex pump

DMH model 28x

- Simplex or duplex pumps (one or two dosing heads), capacity spectrum 1.45 l/h up to 2 x 222 l/h
- Various combinations of dosing heads and materials suitable for applications in chemical engineering
- DMH model 280/281 optionally with Etron Profi electronics

Pump types

50 Hz		60 Hz		100 Hz ²⁾		V _{stroke} [cm ³]	Connections	Motor capacity [kW]		Weight [kg]		DMH model	
[l/h] ¹⁾	[n/min]	[l/h] ¹⁾	[n/min]	[l/h] ¹⁾	[n/min]			standard	PTC resistor ²⁾	simplex pump	duplex pump	simplex pump	duplex pump

p_{max} 50 bar

85	56	102	67	170	112	25.3	3/4"	1.1	1.5	45	71	286-85	286-85/2
111	73	133	88	222	146	25.3	3/4"	1.1	1.5	45	71	286-111	286-111/2
170	112	204	134	-	-	25.3	3/4"	1.1	1.5	45	71	286-170	286-170/2
222	146	-	-	-	-	25.3	3/4"	1.1	1.5	45	71	286-222	286-222/2

p_{max} 100 bar

2	29	2.4	35	4	58	1.1	1/4"	0.18	0.18	13	19	281-2	281-2/2
4.2	63	5	76	8.2	126	1.1	1/4"	0.18	0.18	13	19	281-4.2	281-4.2/2
6.4	96	7.7	115	-	-	1.1	1/4"	0.18	0.18	13	19	281-6.4	281-6.4/2
8	120	9.6	144	-	-	1.1	1/4"	0.18	0.18	13	19	281-8	281-8/2
9.6	144	-	-	-	-	1.1	1/4"	0.18	0.18	13	19	281-9.6	281-9.6/2
19	54	23	65	38	108	6	3/4"	0.55	0.55	36	54	283-19	283-19/2
27	75	32	90	54	150	6	3/4"	0.55	0.55	36	54	283-27	283-27/2
33	92	40	110	-	-	6	3/4"	0.55	0.55	36	54	283-33	283-33/2
40	112	48	134	-	-	6	3/4"	0.55	0.55	36	54	283-40	283-40/2
55	153	-	-	-	-	6	3/4"	0.55	0.55	36	54	283-55	283-55/2
20	28	24	33	40	56	12	3/4"	1.1	1.5	43	64	285-20	285-20/2
40	56	48	67	80	112	12	3/4"	1.1	1.5	43	64	285-40	285-40/2
52	73	63	88	105	146	12	3/4"	1.1	1.5	43	64	285-52	285-52/2
70	98	84	118	-	-	12	3/4"	1.1	1.5	43	64	285-70	285-70/2
80	112	96	134	-	-	12	3/4"	1.1	1.5	43	64	285-80	285-80/2
105	146	-	-	-	-	12	3/4"	1.1	1.5	43	64	285-105	285-105/2

p_{max} 200 bar

1.45	63	1.74	76	2.9	126	0.36	4/6	0.18	0.18	13.7	20.4	280-1.3	280-1.3/2
2.22	96	2.66	115	-	-	0.36	4/6	0.18	0.18	13.7	20.4	280-2.2	280-2.2/2
2.81	120	3.37	144	-	-	0.36	4/6	0.18	0.18	13.7	20.4	280-2.5	280-2.5/2
3.41	144	-	-	-	-	0.36	4/6	0.18	0.18	13.7	20.4	280-3.3	280-3.3/2
7.5	54	9	65	15	108	2.33	8/10	0.55	0.55	36	54	288-7.5	288-7.5/2
10.4	75	12.5	90	21	150	2.33	8/10	0.55	0.55	36	54	288-10	288-10/2
12.8	92	15.4	118	-	-	2.33	8/10	0.55	0.55	36	54	288-13	288-13/2
15.5	112	18.6	134	-	-	2.33	8/10	0.55	0.55	36	54	288-15	288-15/2
21	153	-	-	-	-	2.33	8/10	0.55	0.55	36	54	288-21	288-21/2
18	56	22	67	36	112	6	8/10	1.1	1.5	45	71	287-18	287-18/2
23	73	28	88	46	146	6	8/10	1.1	1.5	45	71	287-23	287-23/2
31	98	37	118	-	-	6	8/10	1.1	1.5	45	71	287-31	287-31/2
36	112	43	134	-	-	6	8/10	1.1	1.5	45	71	287-36	287-36/2
50	146	-	-	-	-	6	8/10	1.1	1.5	45	71	287-50	287-50/2

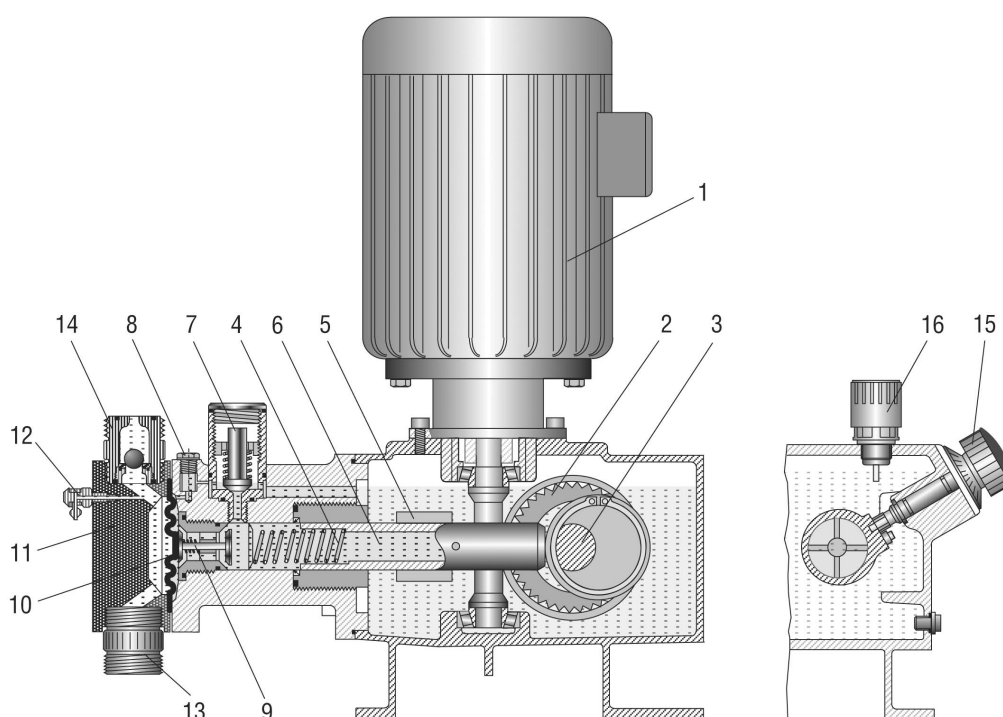
1) l/h per dosing head, double litre capacity for duplex pumps.

2) with motor for frequency control

Technical data

Accuracy	Dosing flow $< \pm 1\%$, linearity $< \pm 1\%$	
Suction height	Max. 1m water column, flooded suction for pumps with a stroke number (n/min) of >75	
Material	Enclosure: aluminium, dosing diaphragm: PTFE, for dosing head and valves please see the respective table	
Motor	Three-phase A.C. motor 220-240 V/380-420 V (50/60 Hz), 440-480 V (60 Hz), IP 55/F; for other motors please see the respective table	
Connections	DMH 280: stainless steel pipe 4/6 DMH 281: stainless steel pipe 1/4"	DMH 283 to 286: stainless steel pipe 3/4" DMH 287 to 288: stainless steel pipe 8/10

Functional description: Sectional drawing DMH 284



All DMH 28x pumps are equipped with the special Bitrac® drive with the active diaphragm protection system (AMS). The rotational energy is converted into a hydraulic energy (traction) via two hydrostatic systems, the piston with stroke control and the pressure relief valve.

- The high-torque **electric motor (1)** drives the **piston (6)** via the **worm gear (2)** and the **eccentric (3)**. The piston carries out a constant stroke, which is transformed into an adjustable dosing stroke by means of the easily adjustable **control slide (5)**.
- The position of the control slide is adjusted using the **adjustment knob (15)** with vernier, and thus the dosing stroke is determined. The average dosing flow can therefore be adjusted linear and continuously from 0 to 100%. The **pressure relief valve (7)** operates as both a pressure limiting valve and a permanent venting valve.
- The surface of the patented **diaphragm protection valve (9)** rests on the **dosing diaphragm (10)**. The diaphragm oscillates freely in the dosing head.
- **Restoring spring (4)**
- **Residual degassing valve (8)**
- **Dosing head (11)**
- **Dosing head deaeration valve (12)**
- **Suction valve (13)**
- **Pressure valve (14)**
- **Measuring stick for hydraulic oil (16)**

API 675 standard

For applications in the petrochemistry we provide special versions of our DMH model 28x dosing pumps with API certificates.

Motors

Motor	DMH 280 / 281	3 AC, 220-240/380-420 V, 50/60 Hz, 440-480 V, 60 Hz, IP 55/F
	DMH 283 / 285 / 286 / 287 / 288	3 AC, 220-240/380-420 V, 50/60 Hz, 440-480 V, 60 Hz, IP 65/F
Motor with PTC resistor	DMH 28x	3 AC, 220-240/380-420 V, 50/60 Hz, 440-480 V, 60 Hz, IP 65/F, PTC resistor
Flameproof motors for simplex and duplex pumps, with ATEX RL 94/9/EC* certificate	DMH 28x	230/400 V, 50 Hz, IP 65/F, II 2 G EEx e II T3 230/400 V, 50 Hz, IP 65/F, II 2 GD EEx de IIC T4 <i>DMH models 285/286/287 with PTC resistor</i>
Motors for Etron Profi, single-phase (1 AC)	DMH 28x	230 V, 50 Hz, IP 65/F 115 V, 60Hz, IP 65/F
Motor kits	DMH 280 / 281	NEMA 56 C and IEC BG, size 63 B 5
	DMH 283 / 288	NEMA 56 C and IEC BG, size 80 B 14
	DMH 285 / 286 / 287	NEMA 145 TC and IEC BG, size 90 B 14

*) The European guideline 94/9/EC ATEX applies to all facilities and security systems which are used in a potentially explosive areas. Our DMH model 28x dosing pumps are examined and certified according to this guideline for non-electrical operating supplies. The motor versions EEX are certified by the manufacturer according to the ATEX guidelines for electrical operating supplies.

Dosing head and valve versions

- Dosing of non abrasive and non combustible liquids

Dosing head	Valves	Material		
		Valve seat	Gasket	Valve ball
Stainless steel	Stainless steel	Stainless steel	Viton	Stainless steel
Stainless steel	Stainless steel	PTFE	Viton	Stainless steel
Hastelloy C	Hastelloy C	PTFE	Viton	Hastelloy C

Options:

- Diaphragm leakage indication
- Heating or cooling flange on request
- Dosing head with electrical heating on request

DMH 287



Microprocessor electronics Etron Profi

- 1.5 m of mains cable
- Mains plug versions for: Europe, Switzerland, USA, Australia
- Optionally with additional signal: empty pre-alert or stroke signal with Hall sensor

Description
Etron Profi for mounting on the terminal box, 115/230 V, 50/60 Hz
Etron Profi for wall mounting, 5 m of cable to the pump, 115/230 V, 50/60 Hz



Etron Profi for wall mounting

Options:

Stroke sensor

- The stroke sensor is an inductive proximity switch with NAMUR output to DIN 19234 and 7.7-10 V DC with 2 m of cable.

Stroke sensor	Order number
DMH 280 / 281	335-031
DMH 283 / 288	335-032
DMH 285 / 286 / 287	335-033

Electronic stroke preselection counter

- The stroke preselection is an electronic measuring system in an IP 55 plastic enclosure for control panel mounting to DIN 43700.

Stroke preselection	Order number
220 V, 50/60 Hz, 5 W	335-1211
110 V, 50/60 Hz, 5 W	335-1212



DMH 284 with stroke preselection

Electric servomotor

- Block-proof synchronous motor with feedback potentiometer
- Two limit switches
- Special servomotors for the synchronous adjustment of both dosing units of duplex pumps

Simplex pump	Order Number
DMH 280 / 281	384-511
DMH 283 / 288	384-512
DMH 285 / 286 / 287	384-513
Duplex pump	Order Number
DMH 280 / 281	384-611
DMH 283 / 288	384-612
DMH 285 / 286 / 287	384-613

Versions:

- 230 V, 50/60 Hz, IP 55
- 115 V, 50/60 Hz, IP 55, 1-phase
- 24 V AC, 50/60 Hz, IP 55, 1-phase

Flameproof EEx d II BT 4

- 230 V, 50/60 Hz, IP 65
- 115 V, 50/60 Hz, IP 65

Options:

- Simplex potentiometers 100 Ω, 200 Ω, 500 Ω, 1000 Ω, 5000 Ω
- Analog input 4-20 mA
- Manual adjustment ON/OFF

Pneumatic servomotor

- Pneumatic double piston part-turn valve actuator
- Pneumatic position control with setpoint diaphragm
- Operation air 5 bars, control air from 0.2 to 1 bar
- Connections 1/8" female thread

Simplex pump	Order Number
DMH 280 to 288	383-34
Duplex pump	Order Number
DMH 280 to 288	383-34
<i>Please order 2 servomotors!</i>	



DMH 285 with electric servomotor

Spare part sets

Comprising:

- Gaskets for dosing head
- Inner valve parts
- 1 dosing diaphragm

Pump type	Dosing head stainless steel ¹⁾		Dosing head Hastelloy C ²⁾
	PTFE/Viton/stainless steel ³⁾	stainl. steel/Viton/stainl. steel ³⁾	PTFE/Viton/Hastelloy C ³⁾
DMH 280	-	553-1054	-
DMH 281	553-281	-	553-1501
DMH 283	553-283	-	on request
DMH 285	553-285	-	on request
DMH 286	553-286	-	on request
DMH 287	-	553-290	-
DMH 288	-	553-1314	-

1) up to 200 bars

2) up to 100 bars

3) valve seat / gasket / ball

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15.820041 V4.0	

Subject to change.