

# Hydraulic Diaphragm Metering Pump Orlita® Evolution 1

Maximum process reliability and flexibility.



## Capacity range of single pump: 3 – 355 l/h, 400 – 12 bar

The Orlita® Evolution hydraulic diaphragm metering pump range of EF1a, EF2a, EF3a and EF4a form an integrated product range with stroke lengths of 15 to 40 mm. This covers the capacity range of 3 to 7,400 l/h at 400 – 10 bar.

A wide range of drive versions is available, including some with ATEX certification for use in Zone 1 or Zone 2 areas at risk from explosion. The Orlita® Evolution product range is designed to comply with API 675.

## Your benefits

Maximum process reliability:

- PTFE multi-layer diaphragm with integral diaphragm rupture warning system
- Integral hydraulic relief valve
- The new diaphragm position control protects against operating faults (e. g. no damage in the event of a blockage on the suction or discharge side)
- Metering reproducibility is better than  $\pm 1\%$  within the 10 – 100% stroke length range under defined conditions and with correct installation

- Continuous bleeding of the hydraulic oil chamber ensures reliable operation

Excellent flexibility:

- The modular compact construction with single and multiple pump versions allows for a wide range of applications, also for multiple pump systems, whereas up to 5 metering units, even with different pump capacities, can be combined.

## Field of application

- Oil and gas industry
- Metering of reactants and catalysts in the chemical industry
- Volume-proportional metering of chemicals/additives in the treatment of boiler feed water
- Level-dependent metering of auxiliary agents in industrial production engineering, for instance hot wax metering in the production of adhesive strips

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## Technical Data

### Technical Data for EF1a Single Pump 50 Hz

Plunger Ø	Stroke volume	Theoretical pump capacity in l/h at strokes/min (50 Hz)							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		73 [2]	97 [3]	116 [4]	145 [5]	165 [6]	181 [7]	201 [8]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
10	1.18	5.2	6.9	8.2	10.2	11.7	12.8	14.2	293	0.62	0.62	DN 3
12	1.70	7.4	9.9	11.8	14.8	16.8	18.4	20.5	203	0.85	0.86	DN 3
14	2.31	10.1	13.4	16.1	20.1	22.9	25.1	27.8	149	0.62	0.83	DN 6
16	3.02	13.2	17.6	21.0	26.2	29.9	32.8	36.4	114	0.72	0.87	DN 6
19	4.25	18.6	24.8	29.6	37.0	42.1	46.2	51.3	81	0.87	0.92	DN 6
23	6.23	27.3	36.3	43.4	54.2	61.7	67.7	75.2	55	0.93	0.95	DN 10
27	8.59	37.6	50.0	59.8	74.7	85.0	93.3	103.6	40	0.95	0.96	DN 10
34	13.62	59.7	79.3	94.8	118.5	134.8	147.9	164.2	25	0.94	0.94	DN 10
40	18.85	82.6	109.7	131.2	164.0	186.6	204.7	227.3	18	0.94	0.94	DN 10

### Technical Data for EF1a Single Pump 60 Hz

Plunger Ø	Stroke volume	Theoretical pump capacity in l/h at strokes/min (60 Hz)					Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		88 [2]	117 [3]	140 [4]	175 [5]	199 [6]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
10	1.18	6.2	8.3	9.9	12.4	14.1	293	0.62	0.62	DN 3
12	1.70	9.0	11.9	14.3	17.8	20.3	203	0.85	0.86	DN 3
14	2.31	12.2	16.2	19.4	24.2	27.6	149	0.62	0.83	DN 6
16	3.02	15.9	21.2	25.3	31.7	36.0	114	0.72	0.87	DN 6
19	4.25	22.5	29.9	35.7	44.7	50.8	81	0.87	0.92	DN 6
23	6.23	32.9	43.7	52.3	65.4	74.4	55	0.93	0.95	DN 10
27	8.59	45.3	60.3	72.1	90.2	102.5	40	0.95	0.96	DN 10
34	13.62	71.9	95.6	114.4	143.0	162.6	25	0.90	0.94	DN 10
40	18.85	99.5	132.3	158.3	197.9	225.1	18	0.94	0.94	DN 10

#### Note:

Abridged presentation of our complete product range. Other types on request. Plunger diameter 8-50 mm.

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## Materials in Contact With the Medium

### Dosing head complete

Dosing head	Diaphragm retaining screw	Diaphragm
Stainless steel 1.4404	Stainless steel 1.4462	PTFE multi-layer diaphragm

### Ball valve DN 3 – DN 10

	Suction/ pressure connector	Valve/head seal	Valve ball	Valve seat	Valve housing	Clamp ring
<b>DN 3(double ball)</b>	Stainless steel 1.4404	Stainless steel 1.4404	Al <sub>2</sub> O <sub>3</sub> ceramic	Stainless steel 1.4404	Stainless steel 1.4404	Hastelloy C4
<b>DN 6 (double ball)</b>	Stainless steel 1.4404	Stainless steel 1.4404	SiN ceramic	Stainless steel 1.4404	Stainless steel 1.4404	Hastelloy C4
<b>DN 10 (single ball)</b>	Stainless steel 1.4404	Stainless steel 1.4404	Al <sub>2</sub> O <sub>3</sub> ceramic	Stainless steel 1.4404	Stainless steel 1.4404	Hastelloy C4

### Plate valve DN 15 - DN 20

	Suction/pressure connector	Valve/head seal	Valve plate	Valve seat	Valve housing
<b>DN 15/DN 20</b>	Stainless steel 1.4404	Stainless steel 1.4571	Stainless steel 1.4462	Stainless steel 1.4404	Stainless steel 1.4404

Further material versions and details available on request.

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