

Lutz Flow Meter Program

HDO Series: Oval gear principle

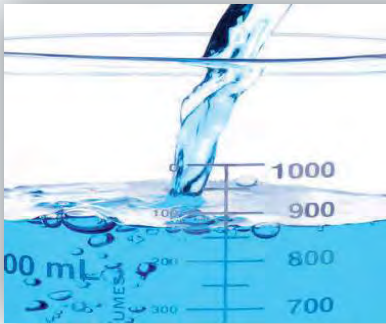


Product Features

The flow meters in plastic or metal version are oval gear types and are suitable for the transfer of thin bodied to highly viscous liquids.

- For high flow volumes, temperatures and pressures
- Few components and wearing parts
- Low pressure loss in the plant

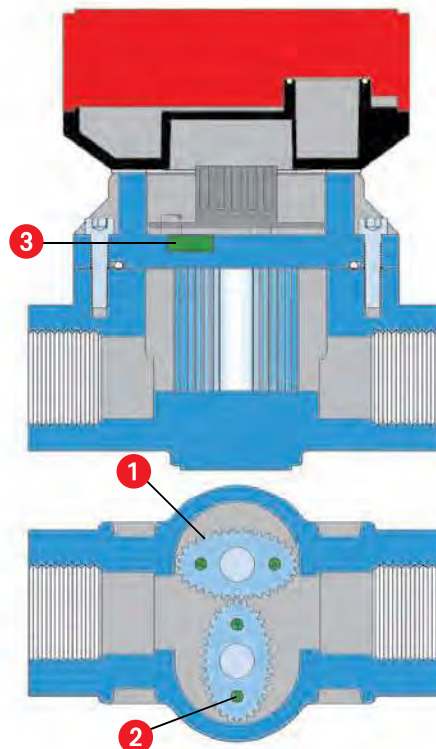




This is the way the HDO operates

Two oval gears interlocked and displaced by 90° in the meter housing are rotated by the flowing fluid. By means of the two oval gears a defined fluid volume „in portions“ is transported. The magnets placed on the rotors are also rotated.

A reed contact fitted outside of the measuring chamber records the magnetic impulses produced. The volume of the flowing fluid is determined by the number of impulses recorded.



- 1 Oval gears
- 2 Permanent magnets
- 3 Reed contact

Lutz Flow Meter HDO 080 with pulse output

for very small flow volumes

- ✓ Housing material metal
- ✓ For very small flow volumes up to 8,3 l/min
- ✓ Compact basic flow meter with 0.3 m connecting cable and plug for connection to external operating unit
- ✓ For neutral liquids, many acids and alkalis, mineral oils, easily inflammable hydrocarbons, solvents, cosmetic products, foods, paints and lacquers, etc.
- ✓ With thread connection



Technical data	Type HDO 080 SS/SS
Range of measurement: below 5 mPas above 5 mPas	0.44 l/min - 8.3 l/min 0.25 l/min - 8.3 l/min
Temperature	max. 80 °C
Viscosity max.	1.000 mPas
Operating pressure max.	16 bar
Accuracy	below 5 mPas ± 2.5% of measured quantity above 5 mPas ± 1% of measured quantity
Reproducibility	± 0.03%
Nominal width	DN 8
Connections: thread/flange	G 1/4 IG
LCD display	Basic flow meter without operating unit (suitable operating unit: BE10/BE10 Ex see accessories)
Materials:	
Housing	Stainless steel (1.4571)
Rotors	Stainless steel (1.4571)
Shaft	Stainless steel (1.4571)
Seal	Viton® (alt, Kalrez®, EPDM)*
Weight	0.7 kg
Type of protection: Basic flow meter	II 2 G c T4
Order No.	Thread
up to 1.000 mPas	0230-600

Optional:

*Additional price seal Kalrez® Order No. 0230-316

Additional price Seal EPDM Order No. 0230-322

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Lutz Flow Meter HDO 120

for non inflammable liquids and easily inflammable liquids

- ✓ Housing material metal
- ✓ For small flow volumes up to 30 l/min
- ✓ **Non Ex-Version:**
For neutral liquids, many acids and alkalis mineral oil and cosmetical products, food-, paints and lacquers, etc.
- ✓ **Ex-Version:** 
For inflammable mineral oil products, easily flammable hydrocarbons and other chemicals in explosion hazardous area
- ✓ With thread connection



Technical data	Type HDO 120 Alu/LCP	Type HDO 120 SS/SS
Range of measurement: below 5 mPas above 5 mPas	2 l/min - 25 l/min 1 l/min - 30 l/min	2 l/min - 25 l/min 1 l/min - 30 l/min
Temperature	max. 80 °C (60 °C**)	max. 120 °C (60 °C**)
Viscosity max.	1.000 mPas	1.000 mPas
Operating pressure max.	16 bar	16 bar
Accuracy	below 5mPas ± 2% of measured quantity above 5mPas ± 0,5% of measured quantity	below 5mPas ± 2% of measured quantity above 5mPas ± 0,5% of measured quantity
Reproducibility	± 0.03%	± 0.03%
Nominal width	DN 12	DN 12
Connections: thread/flange	G 1/2 IG	G 1/2 IG
LCD display	Touch-Screen 63x63 mm, 128x128 pixels, Display sub-total and total volume can be reset	
Menu language	DE, GB, ES, FR, IT, NL, PT, RU	
Materials:		
Housing	Aluminium	Stainless steel (1.4404)
Rotors	LCP	Stainless steel (1.4404)
Shaft	Stainless steel (1.4404)	Stainless steel (1.4404)
Seal	Viton® (alt. Kalrez®, EPDM)*	Viton® (alt. Kalrez®, EPDM)*
Protection class	IP 55	IP 55
Weight	2.1 kg	4.5 kg
Order No.	Thread	Thread
up to 1.000 mPas	0231-101	0231-100

Technical data	Type HDO 120 Alu/LCP Ex	Type HDO 120 SS/SS Ex
Type of protection: Operating unit Basic flow meter	II 2 G Ex IIB T4*** II 2 G c T4 	II 2 G Ex IIB T4*** II 2 G c T4 
Order No.	Thread	Thread
up to 1.000 mPas	0231-103	0231-102


Optional: *Additional price seal Kalrez® Order No. 0230-315, Additional price seal EPDM Order No. 0230-321 **in Ex-Version *** Protection class II 2 G Ex IIC T4 on request.

Recommended Accessories: Power supply unit NG10****		
Voltage	V	220-240
Frequency	Hz	50-60
Order No.	0230-230	

**** Limited battery operation without power supply unit possible. Installation of power supply unit outside of the explosion hazard area required. Viton® and Kalrez® are registered trademarks of DuPont Performance Elastomers.

Lutz Flow Meter HDO 200

for non inflammable liquids and easily inflammable liquids

- ✓ Housing material metal
- ✓ For small and medium flow volumes up to 60 l/min
- ✓ **Non Ex-Version:**
For neutrals liquids, many acids and alkalis mineral oil and cosmetical products, food-, paints and lacquers, etc.
- ✓ **Ex-Version:** 
For inflammable mineral oil products, easily flammable hydrocarbons and other chemicals in explosion hazardous area
- ✓ With thread connection



Technical data	Type HDO 200 Alu/LCP	Type HDO 200 SS/SS
Range of measurement: below 5 mPas above 5 mPas	4.5 l/min - 53 l/min 2 l/min - 60 l/min	4.5 l/min - 53 l/min 2 l/min - 60 l/min
Temperature	max. 80 °C (60 °C**)	max. 120 °C (60 °C**)
Viscosity max.	1.000 mPas	1.000 mPas
Operating pressure max.	16 bar	16 bar
Accuracy	below 5 mPas ± 2% of measured quantity above 5 mPas ± 0,5% of measured quantity	below 5 mPas ± 2 % of measured quantity above 5 mPas ± 0,5% of measured quantity
Reproducibility	± 0.03%	± 0.03%
Nominal width	DN 20	DN 20
Connections: thread/flange	G 3/4 IG	G 3/4 IG
LCD display	Touch-Screen 63x63 mm, 128x128 pixels, Display sub-total and total volume can be reset	
Menu language	DE, GB, ES, FR, IT, NL, PT, RU	
Materials:		
Housing	Aluminium	Stainless steel (1.4404)
Rotors	LCP	Stainless steel (1.4404)
Shaft	Stainless steel (1.4404)	Stainless steel (1.4404)
Seal	Viton® (alt. Kalrez®, EPDM)*	Viton® (alt. Kalrez®, EPDM)*
Protection class	IP 55	IP 55
Weight	2.2 kg	4.8 kg
Order No.	Thread	Thread
up to 1.000 mPas	0231-105	0231-104

Technical data	Type HDO 200 Alu/LCP Ex	Type HDO 200 SS/SS Ex
Type of protection: Operating unit Basic flow meter	II 2 G Ex IIB T4*** II 2 G c T4 	II 2 G Ex IIB T4*** II 2 G c T4 
Order No.	Thread	Thread
up to 1.000 mPas	0231-107	0231-106

Optional: *Additional price seal Kalrez® Order No. 0230-315, Additional price seal EPDM Order No. 0230-321 **in Ex-Version *** Protection class II 2 G Ex IIC T4 on request.

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Recommended Accessories: Power supply unit NG10****		
Voltage	V	220-240
Frequency	Hz	50-60
Order No.	0230-230	

**** Limited battery operation without power supply unit possible. Installation of power supply unit outside of the explosion hazard area required.




Lutz Flow Meter HDO 250

for non inflammable liquids and easily inflammable liquids

- ✓ Housing material plastic or metal
- ✓ For small and medium flow volumes up to 170 l/min
- ✓ **Non Ex-Version:**
For neutral liquids, many acids and alkalis mineral oil and cosmetic products, foods-, paints and lacquers, etc.
- ✓ **Ex-Version:** 
For inflammable mineral oil products, easily flammable hydrocarbons and other chemicals in explosion hazardous area
- ✓ With thread- or flange connection



Technical data	Type HDO 250P	Type HDO 250 Alu/PPS		Type HDO 250 SS/PPS		Type HDO 250 SS/SS	
Range of measurement:							
below 5 mPas	8 l/min - 70 l/min	9,5 l/min - 150 l/min		9,5 l/min - 150 l/min		9,5 l/min - 150 l/min	
above 5 mPas	3 l/min - 75 l/min	6 l/min - 170 l/min		6 l/min - 170 l/min		6 l/min - 170 l/min	
Temperature	max. 80 °C	max. 80 °C (60 °C**)		max. 80 °C (60 °C**)		max. 120 °C (60 °C**)	
Viscosity max.	1.000 mPas	500.000 mPas		500.000 mPas		500.000 mPas	
Operating pressure max.	10 bar	55 bar	16 bar	55 bar	16 bar	55 bar	16 bar
Accuracy quantity	below 5 mPas ± 1% of measured quantity above 5 mPas ± 0.5% of measured quantity	below 5 mPas ± 1% of measured quantity above 5 mPas ± 0.5% of measured quantity		below 5 mPas ± 1% of measured above 5 mPas ± 0.5% of measured quantity		below 5 mPas ± 1% of measured above 5 mPas ± 0.5% of measured quantity	
Reproducibility	0,03%	0,03%		0,03%		0,03%	
Nominal width	DN 25	DN 25		DN 25		DN 25	
Connections:							
thread/flange	G 1 IG	G 1 IG	PN 16	G 1 IG	PN 16	G 1 IG	PN 16
LCD display		Touch-Screen 63x63 mm, 128x128 pixels, Display sub-total and total volume can be reset					
Menu language		DE, GB, ES, FR, IT, NL, PT, RU					
Materials:							
Housing	PPS	Aluminium		Stainless steel (1.4404)		Stainless steel (1.4404)	
Rotors	PPS	PPS		PPS		Stainless steel (1.4401)	
Shaft	Hastelloy C (2.4610)	Stainless steel (1.4404)		Stainless steel (1.4404)		Stainless steel (1.4404)	
Seal	Viton® (alt. FEP, EPDM)*	Viton® (alt. Kalrez®, EPDM)*		Viton® (alt. Kalrez®, EPDM)*		Viton® (alt. Kalrez®, EPDM)*	
Protection class	IP 55	IP 55		IP 55		IP 55	
Weight	1.3 kg	2.2 kg	3.0 kg	4.7 kg	5.9 kg	4.8 kg	6.0 kg
Order No.	Thread	Thread	Flange	Thread	Flange	Thread	Flange
up to 1.000 mPas	0231-200	0231-209	0231-210	0231-205	0231-206	0231-201	0231-202
up to 500.000 mPas	-	0231-211	0231-212	0231-207	0231-208	0231-203	0231-204

Technical data	Type HDO 250 Alu/PPS Ex	Type HDO 250 SS/PPS Ex	Type HDO 250 SS/SS Ex
Type of protection:			
Operating unit	II 2 G Ex IIB T4*** 	II 2 G Ex IIB T4*** 	II 2 G Ex IIB T4*** 
Basic flow meter	II 2 G c T4	II 2 G c T4	II 2 G c T4
Order No.	Thread	Flange	Thread
up to 1.000 mPas	0231-221	0231-222	0231-217
up to 500.000 mPas	0231-223	0231-224	0231-219

Optional: *Additional price HDO 250P: seal FEP Order No. 0211-350, additional price HDO 250P: seal EPDM Order No. 0211-353, additional price HDO 250: seal Kalrez® Order No. 0230-312 additional price HDO 250: seal EPDM Order No. 0230-318. Drum pump connection for B70 / HD-E pump – see page 168.


in Ex-Version * Protection class II 2 G Ex IIC T4 on request. Viton® and Kalrez® are registered trademarks of DuPont Performance Elastomers.

Recommended Accessories: Power supply unit NG10****	
Voltage	V 220-240
Frequency	Hz 50-60
Order No.	0230-230

**** Limited battery operation without power supply unit possible. Installation of power supply unit outside of the explosion hazard area required.




Lutz Flow Meter HDO 400

for non inflammable liquids and easily inflammable liquids

- ✓ Housing material metal
- ✓ For medium flow volumes up to 246 l/min
- ✓ **Non Ex-Version:**
For neutral liquids, many acids and alkalis mineral oil and cosmetical products, foods, paints and lacquers, etc.
- ✓ **Ex-Version:** 
For inflammable mineral oil products, easily flammable hydrocarbons and other chemicals in explosion hazardous areas
- ✓ With thread- or flange connection



Technical data	Type HDO 400 Alu/PPS		Type HDO 400 SS/PPS		Type HDO 400 SS/SS	
Range of measurement						
below 5 mPas	15 l/min - 227 l/min		15 l/min - 227 l/min		15 l/min - 227 l/min	
above 5 mPas	9,5 l/min - 246 l/min		9,5 l/min - 246 l/min		9,5 l/min - 246 l/min	
Temperature	max. 80 °C (60 °C**)		max. 80 °C (60 °C**)		max. 120 °C (60 °C**)	
Viscosity max.	500,000 mPas		500,000 mPas		500,000 mPas	
Operating pressure max.	16 bar		16 bar		16 bar	
Accuracy	below 5 mPas ± 1% of measured quantity above 5 mPas ± 0.5% of measured quantity		below 5 mPas ± 1% of measured quantity above 5 mPas ± 0.5% of measured quantity		below 5 mPas ± 1% of measured quantity above 5 mPas ± 0.5% of measured quantity	
Reproducibility	0.03%		0.03%		0.03%	
Nominal width	DN 40		DN 40		DN 40	
Connections: thread/flange	G 1 1/2 IG	PN 16	G 1 1/2 IG	PN 16	G 1 1/2 IG	PN 16
LCD display	Touch-Screen 63x63 mm, 128x128 pixels, Display sub-total and total volume can be reset					
Menu language	DE, GB, ES, FR, IT, NL, PT, RU					
Materials:						
Housing	Aluminium		Stainless steel (1.4404)		Stainless steel (1.4404)	
Rotors	PPS		PPS		Stainless steel (1.4401)	
Shaft	Stainless steel (1.4404)		Stainless steel (1.4404)		Stainless steel (1.4404)	
Seal	Viton® (alt. Kalrez®, EPDM)*		Viton® (alt. Kalrez®, EPDM)*		Viton® (alt. Kalrez®, EPDM)*	
Protection class	IP 55		IP 55		IP 55	
Weight	4.5 kg	5.5 kg	10.4 kg	12.0 kg	10.5 kg	12.1 kg
Order No.	Thread	Flange	Thread	Flange	Thread	Flange
up to 1,000 mPas	0231-233	0231-234	0231-229	0231-230	0231-225	0231-226
up to 500,000 mPas	0231-235	0231-236	0231-231	0231-232	0231-227	0231-228

Technical data	Type HDO 400 Alu/PPS Ex		Type HDO 400 SS/PPS Ex		Type HDO 400 SS/SS Ex	
Type of protection:						
Operating unit	II 2 G Ex IIB T4*** 		II 2 G Ex IIB T4*** 		II 2 G Ex IIB T4*** 	
Basic flow meter	II 2 G c T4		II 2 G c T4		II 2 G c T4	
Order No.	Thread	Flange	Thread	Flange	Thread	Flange
up to 1,000 mPas	0231-245	0231-246	0231-241	0231-242	0231-237	0231-238
up to 500,000 mPas	0231-247	0231-248	0231-243	0231-244	0231-239	0231-240


Optional: *Additional price seal: Kalrez® Order No. 0230-313, Additional price seal: EPDM Order No. 0230-319. Drum pump connection for B70 / HD-E pump – see page 168.
** in Ex-Version *** Protection class I 2 G Ex IIC T4 on request. Viton® and Kalrez® are registered trademarks of DuPont Performance Elastomers.

Recommended Accessories: Power supply unit NG10****	
Voltage	V 220-240
Frequency	Hz 50-60
Order No.	0230-230

**** Limited battery operation without power supply unit possible. Installation of power supply unit outside of the explosion hazard area required.







Lutz Flow Meter HDO 500

for non inflammable liquids and easily inflammable liquids

- ✓ Housing material metal
- ✓ For large flow volumes up to 380 l/min
- ✓ **Non Ex-Version:**
For neutral liquids, many acids and alkalis mineral oil and cosmetical products, foods, paints and lacquers, etc.
- ✓ **Ex-Version:** 
For inflammable mineral oil products, easily flammable hydrocarbons and other chemicals in explosion hazardous areas
- ✓ With flange connection



Technical data	Type HDO 500 Alu/PPS	Type HDO 500 SS/PPS	Type HDO 500 SS/SS
Range of measurement:			
below 5 mPas	23 l/min - 380 l/min	23 l/min - 380 l/min	23 l/min - 380 l/min
above 5 mPas	15 l/min - 380 l/min	15 l/min - 380 l/min	15 l/min - 380 l/min
Temperature	max. 80 °C (60 °C**)	max. 80 °C (60 °C**)	max. 120 °C (60 °C**)
Viscosity max.	500,000 mPas	500,000 mPas	500,000 mPas
Operating pressure max.	16 bar	16 bar	16 bar
Accuracy	below 5 mPas ± 1% of measured quantity above 5 mPas ± 0.5% of measured quantity	below 5 mPas ± 1% of measured quantity above 5 mPas ± 0.5% of measured quantity	below 5 mPas ± 1% of measured quantity above 5 mPas ± 0.5% of measured quantity
Reproducibility	0.03%	0.03%	0.03%
Nominal width	DN 50	DN 50	DN 50
Connections:			
flange	PN 16	PN 16	PN 16
LCD display	Touch-Screen 63x63 mm, 128x128 mm pixels, Display sub-total and total volume can be reset		
Menu language	DE, GB, ES, FR, IT, NL, PT, RU		
Materials:			
Housing	Aluminium	Stainless steel (1.4404)	Stainless steel (1.4404)
Rotors	PPS	PPS	Stainless steel (1.4401)
Shaft	Stainless steel (1.4404)	Stainless steel (1.4404)	Stainless steel (1.4404)
Seal	Viton® (alt. Kalrez®, EPDM)*	Viton® (alt. Kalrez®, EPDM)*	Viton® (alt. Kalrez®, EPDM)*
Protection class	IP 55	IP 55	IP 55
Weight	6.6 kg	13.6 kg	13.8 kg
Order No.	Flange	Flange	Flange
up to 1,000 mPas	0231-253	0231-251	0231-249
up to 500,000 mPas	0231-254	0231-252	0231-250

Technical data	Type HDO 500 Alu/PPS Ex	Type HDO 500 SS/PPS Ex	Type HDO 500 SS/SS Ex
Type of protection:			
Operating unit	II 2 G Ex ib IIB T4*** 	II 2 G Ex ib IIB T4*** 	II 2 G Ex ib IIB T4*** 
Basic flow meter	II 2 G c T4 	II 2 G c T4 	II 2 G c T4 
Order No.	Flange	Flange	Flange
up to 1,000 mPas	0231-259	0231-257	0231-255
up to 500,000 mPas	0231-260	0231-258	0231-256

Optional: *Additional price seal: Kalrez® Order No. 0230-314, Additional price seal: EPDM Order No. 0230-320.

** in Ex-Version *** Protection class II 2 G Ex IIC T4 on request. Viton® and Kalrez® are registered trademarks of DuPont Performance Elastomers.

Recommended Accessories: Power supply unit NG10****	
Voltage	V 220-240
Frequency	Hz 50-60
Order No.	0230-230

**** Limited battery operation without power supply unit possible. Installation of power supply unit outside of the explosion hazard area required.