

# The Generation of Flow Meters In Touch with the Future

Turbine Wheel Meter TR Series  
Nutating Disc Meter TS Series  
Oval Gear Meter HDO Series



**Safety is our Concern**

# You can count on Lutz.

Precise work counts more than ever in laboratories as well as in production and fluids handling. Flow measurement must therefore be efficient, economical and, above all, practical – in mobile application as well as in stationary operation.

Precise capture of fluid data ensures quality work processes and economical handling of operating resources.

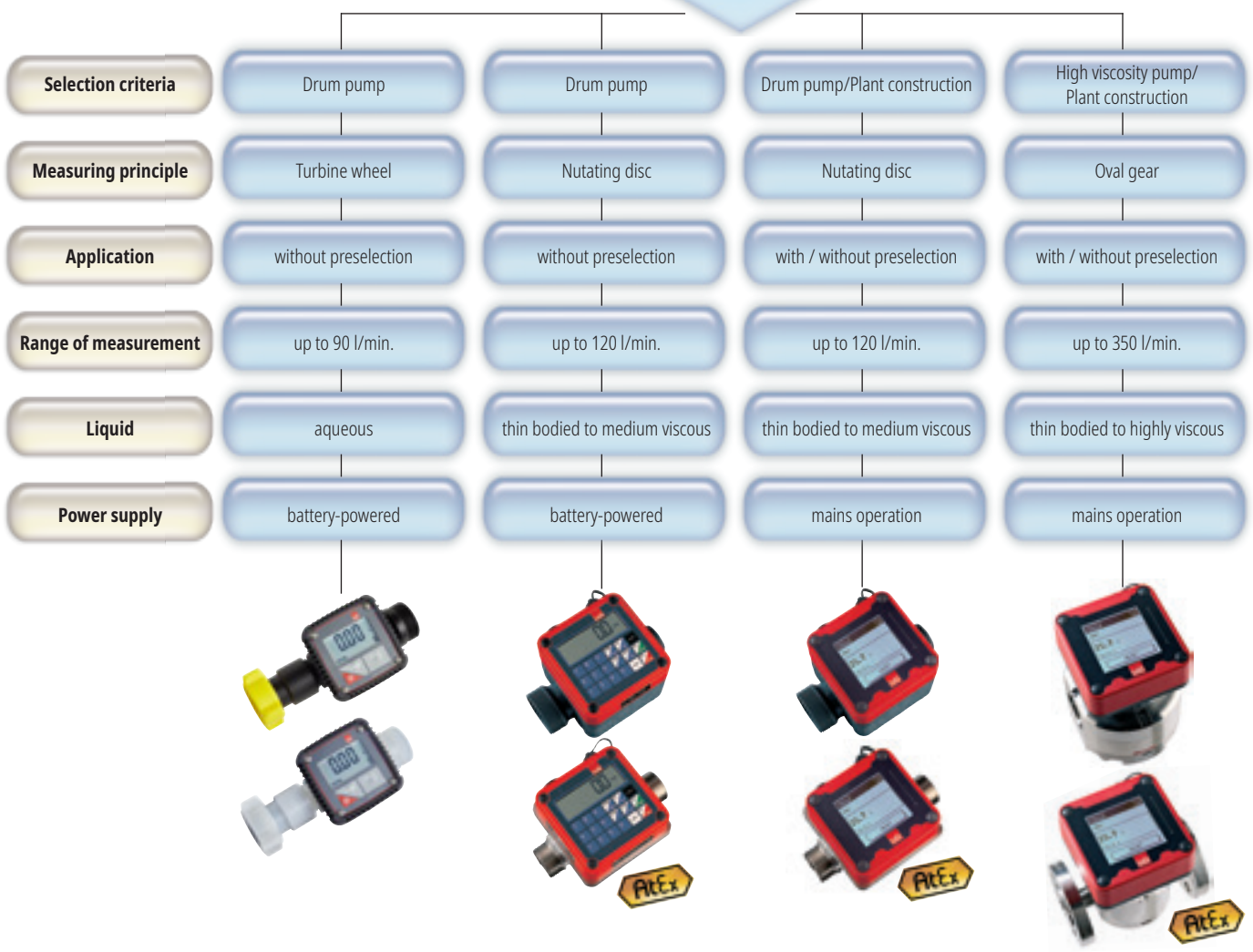
For nearly 20 years, experts have relied on tried-and-true Lutz flow meters – and the new generation of meters will inspire you.

- **TR turbine wheel meter**
- **TS nutating disc meter**
- **HDO oval gear meter**

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product video



**Selection Criteria**



**TR Series**

- ✓ Can be combined with all drum and container pumps
- ✓ Wide measuring range
- ✓ Also for small volume flow
- ✓ Subtotals can be reset

(see pages 4-5)

**TSB Series**

- ✓ LCD display with numeric keypad
- ✓ Large 6-digit LCD
- ✓ Ideal for mobile use with a drum pump

(see pages 7-9)

**TS Series**

- ✓ Touch screen display
- ✓ Multilingual menus
- ✓ Simple plain-text operation
- ✓ Plug & play modular design

(see pages 10-19)

**HDO Series**

- ✓ Touch screen display
- ✓ Multilingual menus
- ✓ Simple plain-text operation
- ✓ Plug & play modular design
- ✓ For high flowrates, temperatures and pressures

(see pages 20-27)

# Lutz flow meter program

## The Reasonable: Lutz flow meter TR

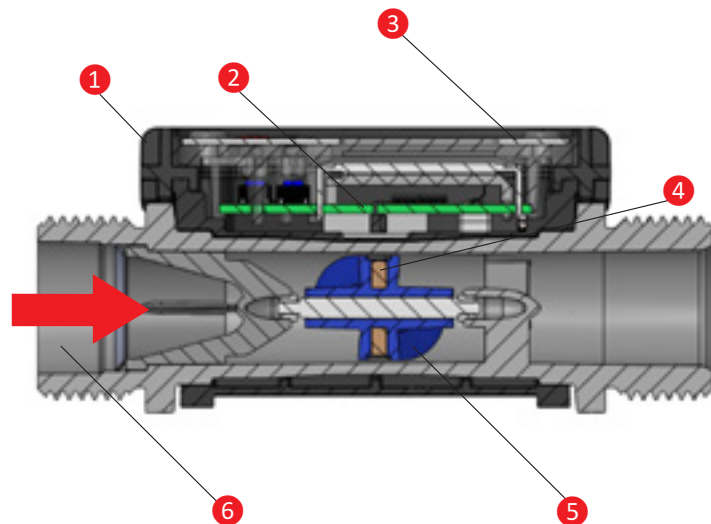


### Easy to operate

Easy to operate, compact and quick to install on all drum and container pumps: The new Lutz flow meter TR3 in PP or PVDF. A flow meter, easy to handle, that you can „count on“ in any situation. The symmetrical measuring chamber can be used for all flow directions and measures low-viscosity, non-flammable substances precisely, quickly and above all efficiently.

### With drive to the measurement result

The new TR3 with illuminated, digital display according to the measuring principle of a turbine wheel meter has a two-line LED display showing the current output and the total memory or the 8 partial quantity memories. The display can be mounted adapted to the viewing angle or moved when mounted. The measuring accuracy is better than  $\pm 1\%$ , the nominal operating pressure is 10 bar.



### Benefits:

- Flexible installation
- Variable display alignment
- Larger volume flow range
- Easy change of battery

- 1 Housing top (PC) with shock protector (NBR)
- 2 PCB
- 3 Keypad foil
- 4 Magnet
- 5 Axial flow turbine (PP or PVDF)
- 6 Measuring chamber (PP or PVDF)

# The economical liquid volume measurement

The choice is yours



## PP for neutral and aggressive liquids

such as glycol, ferric (III) chloride, hydrochloric acid, phosphoric acid, etc.



## PVDF for highly aggressive fluids

such as chlorine solution, nitric acid, sulphuric acid, etc.

Lutz offers complete pumping systems for the laboratory and research sector. The pump set Lutz B2 Vario can be optionally equipped with a flow meter TR3-PP (Order No. 0213-051).



Type		TR3-PP		TR3-PVDF	
<b>Material</b>	Housing top Keypad Shock protector	PC PES NBR		PC PES NBR	
<b>Material</b> (in contact with the medium)	Measuring chamber Rotor Shaft Bearing ball Seal	PP PP Hastelloy C-22 PTFE PTFE		PVDF PVDF Hastelloy C-22 PTFE PTFE	
<b>Range of measurement</b>		5-120 l/min.		5-120 l/min.	
<b>Range of viscosity</b>		0.8-40 mPas		0.8-40 mPas	
<b>max. operating pressure</b>		10 bar		10 bar	
<b>Measuring accuracy (uncalibrated)</b>		± 2%*		± 2%*	
<b>Measuring accuracy (calibrated)</b>		± 1%*		± 1%*	
<b>Repeating accuracy</b>		± 0,5%		± 0,5%	
<b>Connection</b>		G 1	G 1 1/4	G 1	G 1 1/4
<b>Protection class</b>		IP 65		IP 65	
<b>Battery</b>		Two 1.5 V batteries (AAA) replaceable		Two 1.5 V batteries (AAA) replaceable	
<b>Range of temperature</b>		-10 up to +50 °C		-10 up to +50 °C	
<b>Dimensions</b>		85 x 123 x 52 mm		85 x 123 x 52 mm	
<b>Weight</b>		0.22 kg		0.24 kg	
<b>Order No.</b>	Assembly at B1/B2 Battery/B2 Vario	<b>0213-051</b>	-	<b>0213-061</b>	-
<b>Order No.</b>	Assembly at drum pump	-	<b>0213-050</b>	-	<b>0213-060</b>
<b>Order No.</b>	Assembly at nozzle	-	<b>0213-052</b>	-	<b>0213-062</b>

\* Test assembly: Medium: water/diesel, flow in the preferred direction, settling section of 0.2 m on inlet and outlet of the flow meter

# Lutz flow meter program

TS Series: Nutating disc principle



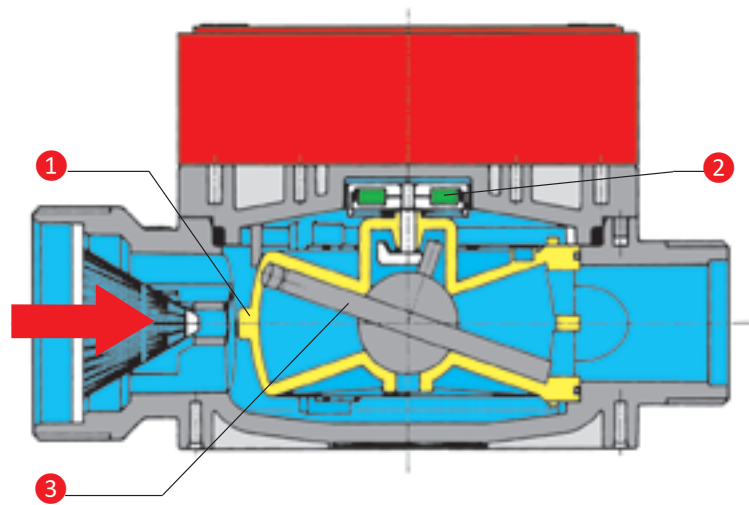
## Product Features

The flow meters in plastic or metal version are nutating disc types and are suitable for the transfer of neutral, aggressive, inflammable and viscous liquids.

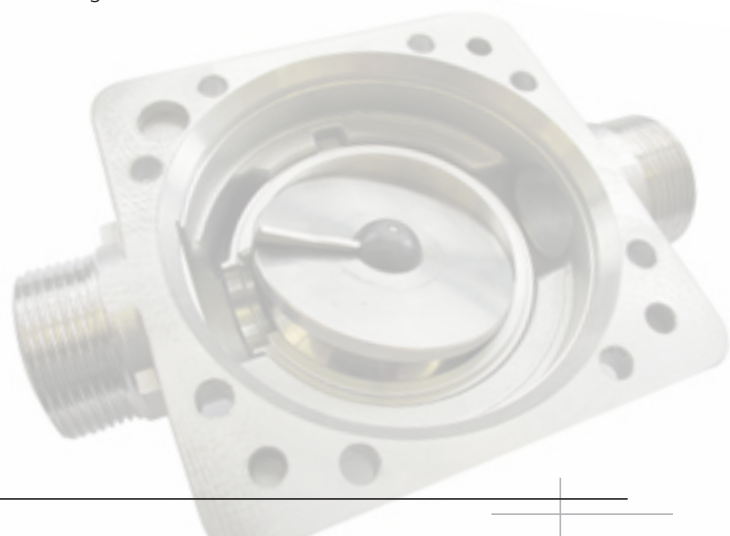
- Wide application range
- Optionally in PURE version

## Take control: TS operates so

The liquid streaming causes a nutating disc to gyrate about its own axis. A multi-pole solenoid is made to rotate via a driver and switches a reed contact through the housing cover. The volume flowing through is determined from the number of pulses.



- ① Measuring chamber
- ② Magnet
- ③ Nutating disc



# Lutz flow meter program

The mobile: Lutz flow meter TSB



Lutz flow meters of series TSB can be used for most different applications. They are suitable for the measurement of thin-bodied up to medium-viscous and inflammable liquids. Due to a battery-powered option, series TSB can be also ideally used for a mobile operation, independent from a mains system.

## Benefits:

- Convenient, user-friendly display with numeric keypad
- Large 6-digit LCD
- Flow rate display at a keystroke
- Keyboard lock as protection against inadvertent operation
- Easy calibration
- Explosion protection with Atex certification RL 2014/34/EU

# Flow measurement without volume preselection - TSB

for non inflammable liquids



Technical data	Type ST	Type SL	Type VA I
Range of use	Neutral liquids like water, mineral oils	Abrasive liquids like acids and alkalis	Many acids, alkalis and other liquids
Flow volume	min. 10 – max. 100** l/min.	min. 10 – max. 100** l/min.	min. 10 – max. 100 l/min.
Temperature	60 °C	60 °C	80 °C
Viscosity	2.000 mPas	2.000 mPas	5.000 mPas
Operating pressure	4 bar	4 bar	10 bar
Accuracy	± 1% standard < 1% with adjustment to application conditions	± 1% standard < 1% with adjustment to application conditions	± 1%
Inlet port	G 2 outer thread to fit connector with union nut	G 2 outer thread to fit connector with union nut	G 1 1/4 outer thread
Outlet port	G 1 1/4 outer thread	G 1 1/4 outer thread	G 1 1/4 outer thread
LCD display	19 mm character height, 6-digit display, individual and total volume reset possible	19 mm character height, 6-digit display, individual and total volume reset possible	19 mm character height, 6-digit display, individual and total volume reset possible
Materials:			
Housing	PPO	PPO	Stainless steel (1.4581/1.4571)*
Measuring chamber	PPO/PPS	PPO/PPS	Stainless steel (1.4581/1.4571) ETFE / ETFE
Seals	FPM	FPM	FEP
Magnet	BaFe / PA / Stainless steel 1.4401	PPS encapsulated	ETFE encapsulated
Protection class	IP 54	IP 54	IP 54
Weight	1,0 kg	1,0 kg	3,6 kg
<b>Order No.</b>	<b>0212-101</b>	<b>0212-201</b>	<b>0212-501</b>

\* Special materials on request General information to the chemical resistance of the different flow meters you will find in our chemical resistance list.  
 \*\*Short-time 120 l/min.



# Flow measurement without volume preselection - TSB

for highly inflammable liquids



Technical data	Type LM	Type UN	Type VA I
Range of use	Solvents and other easily inflammable liquids, oils and neutral liquids.	Solvents and easily inflammable liquids, most of acids and alkalis.	Nearly all solvents and easily inflammable liquids. Many acids, alkalis and other liquids.
Flow volume	min. 10 – max. 100** l/min.	min. 10 – max. 100** l/min.	min. 10 – max. 100 l/min.
Temperature	60 °C	60 °C	60 °C
Viscosity	2.000 mPas	2.000 mPas	5.000 mPas
Operating pressure	4 bar	4 bar	10 bar
Accuracy	± 1% standard < 1%with adjustment to application conditions	± 1% standard < 1%with adjustment to application conditions	± 1%
Inlet port	G 2 outer thread to fit connector with union nut	G 2 outer thread to fit connector with union nut	G 1 1/4 outer thread
Outlet port	G 1 1/4 outer thread	G 1 1/4 outer thread	G 1 1/4 outer thread
LCD display	19 mm character height, 6-digit display, individual and total volume reset possible	19 mm character height, 6-digit display, individual and total volume reset possible	19 mm character height, 6-digit display, individual and total volume reset possible
Materials:			
Housing	PPS	PPS	Stainless steel (1.4581/1.4571)*
Measuring chamber	LCP	LCP	Stainless steel (1.4581/1.4571) ETFE/PTFE
Selas	FEP	FEP	FEP
Magnet	BaFe / MS / Stainless steel 1.4401	PPS encapsulated	PTFE encapsulated
Type of protection:			
Operating unit	II 2G Ex ib IIB T4	II 2G Ex ib IIB T4	II 2G Ex ib IIB T4
Basic flow meter	II 2G T4	II 2G T4	II 2G T4
Protection class	IP 54	IP 54	IP 54
Weight	1,0 kg	1,0 kg	3,6 kg
<b>Order No.</b>	<b>0212-302</b>	<b>0212-402</b>	<b>0212-502</b>

\* Special materials on request General information to the chemical resistance of the different flow meters you will find in our chemical resistance list.  
 \*\*Short-time 120 l/min.



## Flexible to use. A wide array of possibilities:



- Food, gourmet and beverage industry
- Chemical industry
- Petrochemicals
- Chemicals and mineral oils
- Machine shops and metal working
- Automotive industry and suppliers
- Electroplating and surface treatment
- Paint and varnish industry
- Pharmaceuticals and cosmetics
- Plant and apparatus construction
- Engineering and design

There are a lot of measuring devices for fluids.  
But the advantages of the new Lutz flow meters stand out from them all.  
Their precision, flexibility and user-friendliness will win you over.

Scan for  
product video



## Discover the pluses of innovative Lutz technology:

- + Touch screen display
- + Multilingual menus
- + Simple plain-text operation
- + Integrated help function
- + High precision through overrun correction
- + Safety and monitoring functions
- + Simple system connection
- + Plug & play modular design



## Outstanding user-friendliness.

The first flow meter with a **touch screen display** and backlighting will convince you with its simple requirements-oriented display and usability, multilingual interface and compact design.

With **plain-text instructions, system reports and help texts**, as well as **monitoring functions**, its user controls practically eliminate errors. Manual operation is just as possible as external control.

■ **In Touch with the Future.**





## Simply easy to use: Flow measurement with volume preselection.

The relay module – an intelligent cornerstone of Lutz meter innovation – helps you automate work processes and organize more efficiently.

The desired volume can simply be preselected and started with the touch of a button. Whether for mobile use with a drum pump or for controlling complex systems: With easy volume preselection, your processes will be simpler and safer. The pump, the system and/or the solenoid valve are turned on and off by the integrated electronics.

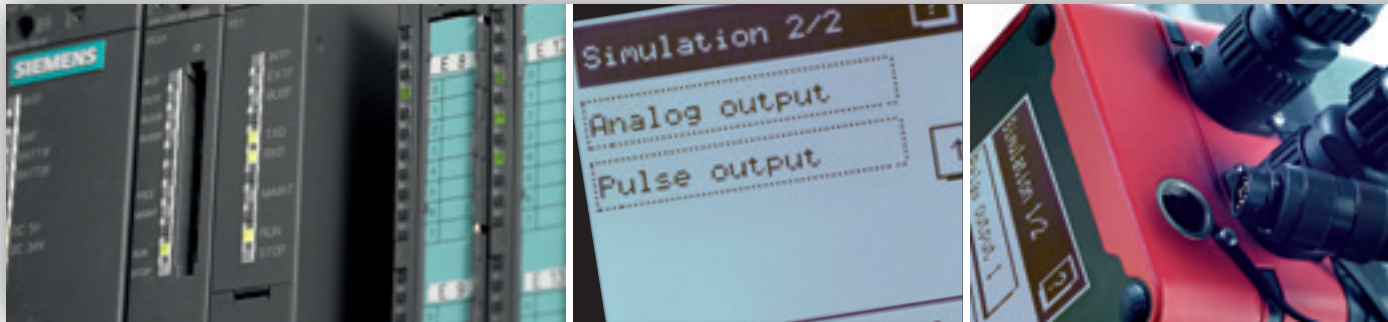
■ **Precise, safe and economical.**



## **Combine to your needs. Easy to assemble.**

The Lutz flow meter can be connected to your system quickly and with no wiring work, using socket connections that can't be confused. The new connection system is assembled like a modular design, allowing individual modules, such as the basic meter, control unit and relay module, to be combined with each other and installed.





## The flexible meter system you can rely on.

- Simple installation and start-up
- External controls and data evaluation through standard interfaces
- Modules can be installed separately by location
- Always the best technical and financial solution



# Flow measurement without volume preselection - TS

for non inflammable liquids



Flow meters type VA10 in PURE-version are optionally available for the food-, cosmetics and pharmaceutical industry.

Technical data	Type ST10	Type SL10	Type VA10
Range of use	Neutral liquids like water, mineral oils.	Abrasive liquids like acids and alkalis.	Many acids, alkalis and other liquids.
Flow volume	min. 10 – max. 100** l/min.	min. 10 – max. 100** l/min.	min. 10 – max. 100 l/min.
Temperature	60 °C	60 °C	80 °C
Viscosity	2.000 mPas	2.000 mPas	5.000 mPas
Operating pressure	4 bar	4 bar	10 bar
Accuracy	± 1% standard < 1% with adjustment to application conditions	± 1% standard < 1% with adjustment to application conditions	± 1%
Inlet port	G 2 outer thread to fit connector with union nut	G 2 outer thread to fit connector with union nut	G 1 1/4 outer thread
Outlet port	G 1 1/4 outer thread	G 1 1/4 outer thread	G 1 1/4 outer thread
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	PPO	PPO	Stainless steel (1.4581/ 1.4571)*
Measuring chamber	PPO/PPS	PPO/PPS	Stainless steel (1.4581/1.4571) ETFE / ETFE
Seals	FPM	FPM	FEP
Magnet	BaFe / PA / Stainless steel1.4401	PPS encapsulated	ETFE encapsulated
Protection class	IP 55	IP 55	IP 55
Weight	1,1 kg	1,1 kg	3,7 kg
<b>Order No.</b>	<b>0231-000</b>	<b>0231-010</b>	<b>0231-049</b>

\* Special materials on request General information to the chemical resistance of the different flow meters you will find in our chemical resistance list.  
 \*\*Short-time 120 l/min.

## Recommended Accessories: Power supply unit NG10\*\*\*

Voltage	220-230 V
Frequency	50-60 Hz
<b>Order No.</b>	<b>0230-230</b>

\*\*\* Limited battery operation without power supply unit possible.



# Flow measurement without volume preselection - TS

for highly inflammable liquids



Flow meters type VA10 in PURE-version are optionally available for the food-, cosmetics and pharmaceutical industry.

Technical data	Type LM10 Ex	Type UN10 Ex	Type VA10 Ex
Range of use	Solvents and other easily inflammable liquids, oils and neutral liquids.	Solvents and easily inflammable liquids, most of acids and alkalis.	Nearly all solvents and easily inflammable liquids. Many acids, alkalis and other liquids.
Flow volume	min. 10 – max. 100** l/min.	min. 10 – max. 100** l/min.	min. 10 – max. 100 l/min.
Temperature	60 °C	60 °C	60 °C
Viscosity	2.000 mPas	2.000 mPas	5.000 mPas
Operating pressure	4 bar	4 bar	10 bar
Accuracy	± 1% standard < 1% with adjustment to application conditions	± 1% standard < 1% with adjustment to application conditions	± 1%
Inlet port	G 2 outer thread to fit connector with union nut	G 2 outer thread to fit connector with union nut	G 1 1/4 outer thread
Outlet port	G 1 1/4 outer thread	G 1 1/4 outer thread	G 1 1/4 outer thread
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	PPS	Stainless steel (1.4581/1.4571)*
Measuring chamber	LCP	LCP	Stainless steel (1.4581/1.4571) ETFE/PTFE
Seals	FEP	FEP	FEP
Magnet	BaFe / MS / Stainless steel 1.4401	PPS encapsulated	PTFE encapsulated
Type of protection:			
Operating unit	II 2G Ex ib IIB T4***	II 2G Ex ib IIB T4***	II 2G Ex ib IIB T4***
Basic flow meter	II 2G T4	II 2G T4	II 2G T4
Protection class	IP 55	IP 55	IP 55
Weight	1,1 kg	1,1 kg	3,7 kg
<b>Order No.</b>	<b>0231-020</b>	<b>0231-030</b>	<b>0231-040</b>

\* Special materials on request General information to the chemical resistance of the different flow meters you will find in our chemical resistance list. \*\*Short-time 120 l/min. \*\*\*Protection class II 2G Ex ib IIC T4 on request

## Recommended Accessories: Power supply unit NG10\*\*\*

Voltage	220-230 V
Frequency	50-60 Hz
<b>Order No.</b>	<b>0230-230</b>

\*\*\* Limited battery operation without power supply unit possible.

# Flow measurement with volume preselection - TS

for non inflammable liquids



Flow meters type VA10 in PURE-version are optionally available for the food-, cosmetics and pharmaceutical industry.

Technical data	Type ST10 / RM10 230 V	Type SL10 / RM10 230 V	Type VA10 / RM10 230 V
Range of use	Neutral liquids like water, mineral oils.	Abrasive liquids like acids and alkalis.	Many acids, alkalis and other medias.
Flow volume	min. 10 – max. 100** l/min.	min. 10 – max. 100** l/min.	min. 10 – max. 100 l/min.
Temperature	60 °C	60 °C	80 °C
Viscosity	2.000 mPas	2.000 mPas	5.000 mPas
Operating pressure	4 bar	4 bar	10 bar
Accuracy	± 1% standard < 1% with adjustment to application conditions	± 1% standard < 1% with adjustment to application conditions	± 1%
Inlet port	G 2 outer thread to fit connector with union nut	G 2 outer thread to fit connector with union nut	G 1 1/4 outer thread
Outlet port	G 1 1/4 outer thread	G 1 1/4 outer thread	G 1 1/4 outer thread
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	PPO	PPO	Stainless steel (1.4581/1.4571)*
Measuring chamber	PPO/PPS	PPO/PPS	Stainless steel (1.4581/1.4571) ETFE/PTFE
Seals	FPM	FPM	FEP
Magnet	BaFe / PA / Stainless steel 1.4401	PPS encapsulated	PTFE encapsulated
Protection class	IP 55	IP 55	IP 55
Weight	1,6 kg	1,6 kg	4,1 kg
<b>Relay module RM10</b>			
Voltage	220-230 V		
Frequency	50-60 Hz		
Switching outputs	2 NO (potentially bound)		
Output 1 (pump)	8 A, cos > 0,7		
Output 2 (valve)	0,5 A		
<b>Order No.</b>	<b>0231-001</b>	<b>0231-011</b>	<b>0231-041</b>

\* Special materials on request General information to the chemical resistance of the different flow meters you will find in our chemical resistance list.  
 \*\*Short-time 120 l/min.

# Flow measurement with volume preselection - TS

for highly inflammable liquids



Flow meters type VA10 in PURE-version are optionally available for the food-, cosmetics and pharmaceutical industry.

Technical data	Type LM10 / Ex-RM10dK	Type UN10 / Ex-RM10dK	Type VA10 / Ex-RM10dK
Range of use	Solvents and many other easily inflammable liquids, oils and neutral liquids.	Solvents and easily inflammable liquids, most of acids and alkalis.	Nearly all solvents and easily inflammable liquids. Many acids, alkalis and other liquids.
Flow volume	min. 10 – max. 100** l/min.	min. 10 – max. 100** l/min.	min. 10 – max. 100 l/min.
Temperature	40 °C	40 °C	40 °C
Viscosity	2.000 mPas	2.000 mPas	5.000 mPas
Operating pressure	4 bar	4 bar	10 bar
Accuracy	± 1% standard < 1% with adjustment to application conditions	± 1% standard < 1% with adjustment to application conditions	± 1%
Inlet port	G 2 outer thread to fit connector with union nut	G 2 outer thread to fit connector with union nut	G 1 1/4 outer thread
Outlet port	G 1 1/4 outer thread	G 1 1/4 outer thread	G 1 1/4 outer thread
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	PPS	Stainless steel (1.4581/1.4571)*
Measuring chamber	LCP	LCP	Stainless steel (1.4581/1.4571) ETFE/PTFE
Seals	FEP	FEP	FEP
Magnet	BaFe / MS / Stainless steel 1.4401	PPS encapsulated	PTFE encapsulated
Type of pretection:			
Operating unit	II 2G Ex ib IIB T4***	II 2G Ex ib IIB T4***	II 2G Ex ib IIB T4***
Basic flow meter	II 2G T4	II 2G T4	II 2G T4
Protection class	IP 55	IP 55	IP 55
Weight	4,3 kg	4,3 kg	6,7 kg
<b>Relay module Ex-RM10dK</b>			
Voltage	220-230 V		
Frequency	50-60 Hz		
Switching outputs	2 NO (potentially bound)		
Output 1 (pump)	8 A, cos > 0,7		
Output 2 (valve)	0,5 A		
Type of protection	II 2G Ex de [ib Gb] IIC T6 Gb		
<b>Order No.</b>	<b>0231-020 + 0230-251</b>	<b>0231-030 + 0230-251</b>	<b>0231-040 + 0230-251</b>

\* Special materials on request General information to the chemical resistance of the different flow meters you will find in our chemical resistance list.

\*\* Short-time 120 l/min.

\*\*\* Protection class II 2G Ex ib IIC T4 on request

# Lutz Flow Meter Program

HDO Series: Oval gear principle

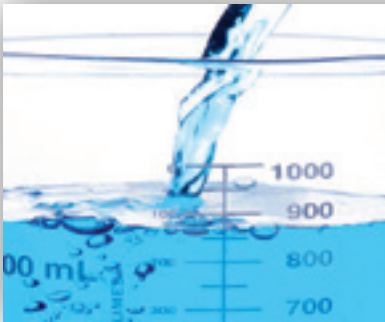


## Product Features

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

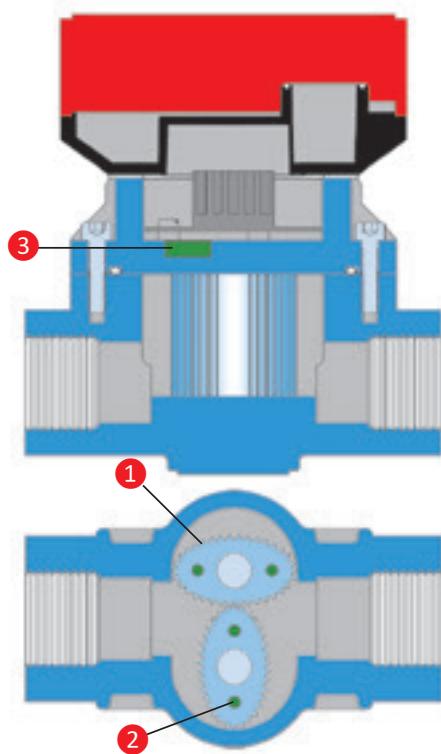




### This is the way the HDO operates

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, 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	FPM (alt, FFPM, EPDM)*
Weight	0.7 kg
Type of protection: Basic flow meter	II 2G Ex h IIB T4 Gb
<b>Order No.</b>	<b>Thread</b>
<b>up to 1.000 mPas</b>	<b>0230-600</b>


Optional:

\*Additional price seal FFPM Order No. 0230-316

Additional price Seal EPDM Order No. 0230-322

# 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, 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	FPM (alt. FFPM, EPDM)*	FPM (alt. FFPM, EPDM)*
Protection class	IP 55	IP 55
Weight	2.1 kg	4.5 kg
<b>Order No.</b>	<b>Thread</b>	<b>Thread</b>
<b>up to 1.000 mPas</b>	<b>0231-101</b>	<b>0231-100</b>

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


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

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



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

# 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, 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	FPM (alt. FFPM, EPDM)*	FPM (alt. FFPM, EPDM)*
Protection class	IP 55	IP 55
Weight	2.2 kg	4.8 kg
<b>Order No.</b>	<b>Thread</b>	<b>Thread</b>
<b>up to 1.000 mPas</b>	<b>0231-105</b>	<b>0231-104</b>
Technical data	Type HDO 200 Alu/LCP Ex	Type HDO 200 SS/SS Ex
Type of protection: Operating unit Basic flow meter	II 2G Ex ib IIB T4*** II 2G Ex h IIB T4 Gb 	II 2G Ex ib IIB T4*** II 2G Ex h IIB T4 Gb 
<b>Order No.</b>	<b>Thread</b>	<b>Thread</b>
<b>up to 1.000 mPas</b>	<b>0231-107</b>	<b>0231-106</b>

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


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

\*\*\*\* 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, 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 above 5 mPas	8 l/min - 70 l/min 3 l/min - 75 l/min	9,5 l/min - 150 l/min 6 l/min - 170 l/min		9,5 l/min - 150 l/min 6 l/min - 170 l/min		9,5 l/min - 150 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	16 bar		16 bar		16 bar	
Accuracy quantity	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		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%		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	FPM (alt. FEP, EPDM)*	FPM (alt. FFPM, EPDM)*		FPM (alt. FFPM, EPDM)*		FPM (alt. FFPM, 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
<b>Order No.</b>	<b>Thread</b>	<b>Thread</b>	<b>Flange</b>	<b>Thread</b>	<b>Flange</b>	<b>Thread</b>	<b>Flange</b>
<b>up to 1.000 mPas</b>	<b>0231-200</b>	<b>0231-209</b>	<b>0231-210</b>	<b>0231-205</b>	<b>0231-206</b>	<b>0231-201</b>	<b>0231-202</b>
<b>up to 500.000 mPas</b>	<b>-</b>	<b>0231-211</b>	<b>0231-212</b>	<b>0231-207</b>	<b>0231-208</b>	<b>0231-203</b>	<b>0231-204</b>
<b>Technical data</b>		<b>Type HDO 250 Alu/PPS Ex</b>		<b>Type HDO 250 SS/PPS Ex</b>		<b>Type HDO 250 SS/SS Ex</b>	
Type of protection:		II 2G Ex ib IIB T4***		II 2G Ex ib IIB T4***		II 2G Ex ib IIB T4*** 	
Operating unit		II 2G Ex h IIB T4 Gb		II 2G Ex h IIB T4 Gb		II 2G Ex h IIB T4 Gb	
Basic flow meter		II 2G Ex h IIB T4 Gb		II 2G Ex h IIB T4 Gb		II 2G Ex h IIB T4 Gb	
<b>Order No.</b>	<b>Thread</b>	<b>Flange</b>	<b>Thread</b>	<b>Flange</b>	<b>Thread</b>	<b>Flange</b>	<b>Flange</b>
<b>up to 1.000 mPas</b>	<b>0231-221</b>	<b>0231-222</b>	<b>0231-217</b>	<b>0231-218</b>	<b>0231-213</b>	<b>0231-214</b>	<b>0231-214</b>
<b>up to 500.000 mPas</b>	<b>0231-223</b>	<b>0231-224</b>	<b>0231-219</b>	<b>0231-220</b>	<b>0231-215</b>	<b>0231-216</b>	<b>0231-216</b>

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 FFPM Order No. 0230-312 additional price HDO 250: seal EPDM Order No. 0230-318. Drum pump connection for B70 / HD-E pump – see page 34. \*\*in Ex-Version \*\*\* Protection class II 2G Ex h IIC T4 on request.


## Recommended Accessories: Power supply unit NG10\*\*\*

Voltage	220-230 V
Frequency	50-60 Hz
<b>Order No.</b>	<b>0230-230</b>

\*\*\*\* 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, 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 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 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)		(1.4404)	
Rotors	PPS		PPS		Stainless steel (1.4401)	
Shaft	Stainless steel (1.4404)		Stainless steel (1.4404)		Stainless steel (1.4404)	
Seal	FPM (alt. FFPM, EPDM)*		FPM (alt. FFPM, EPDM)*		FPM (alt. FFPM, 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
<b>Order No.</b>	<b>Thread</b>	<b>Flange</b>	<b>Thread</b>	<b>Flange</b>	<b>Thread</b>	<b>Flange</b>
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 2G Ex ib IIB T4*** 		II 2G Ex ib IIB T4*** 		II 2G Ex ib IIB T4*** 	
Basic flow meter	II 2G Ex h IIB T4 Gb		II 2G Ex h IIB T4 Gb		II 2G Ex h IIB T4 Gb	
<b>Order No.</b>	<b>Thread</b>	<b>Flange</b>	<b>Thread</b>	<b>Flange</b>	<b>Thread</b>	<b>Flange</b>
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: FFPM Order No. 0230-313, Additional price seal: EPDM Order No. 0230-319. Drum pump connection for B70 / HD-E pump – see page 34.


\*\* in Ex-Version \*\*\* Protection class II 2G Ex ib IIC T4 on request.

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

\*\*\*\* 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, 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 above 5 mPas	23 l/min - 380 l/min 15 l/min - 380 l/min	23 l/min - 380 l/min 15 l/min - 380 l/min	23 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 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 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: thread/ 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	FPM (alt. FFPM, EPDM)*	FPM (alt. FFPM, EPDM)*	FPM (alt. FFPM, EPDM)*
Protection class	IP 55	IP 55	IP 55
Weight	6,6 kg	13,6 kg	13,8 kg
<b>Order No.</b>	<b>Flange</b>	<b>Flange</b>	<b>Flange</b>
<b>up to 1.000 mPas</b>	<b>0231-253</b>	<b>0231-251</b>	<b>0231-249</b>
<b>up to 500.000 mPas</b>	<b>0231-254</b>	<b>0231-252</b>	<b>0231-250</b>

Technical data	Type HDO 200 Alu/PPS Ex	Type HDO 200 SS/PPS Ex	Type HDO 500 SS/SS Ex
Type of protection: Operating unit Basic flow meter	II 2G Ex ib IIB T4***  II 2G Ex h IIB T4 Gb	II 2G Ex ib IIB T4***  II 2G Ex h IIB T4 Gb	II 2G Ex ib IIB T4***  II 2G Ex h IIB T4 Gb
<b>Order No.</b>	<b>Flange</b>	<b>Flange</b>	<b>Flange</b>
<b>up to 1.000 mPas</b>	<b>0231-259</b>	<b>0231-257</b>	<b>0231-255</b>
<b>up to 500.000 mPas</b>	<b>0231-260</b>	<b>0231-258</b>	<b>0231-256</b>

Optional: \*Additional price seal: FFPM Order No. 0230-314, Additional price seal: EPDM Order No. 0230-320. \*\* in Ex-Version \*\*\* Protection class II 2G Ex ib IIC T4 on request.

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

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

# Accessories Lutz Flow Meter Program

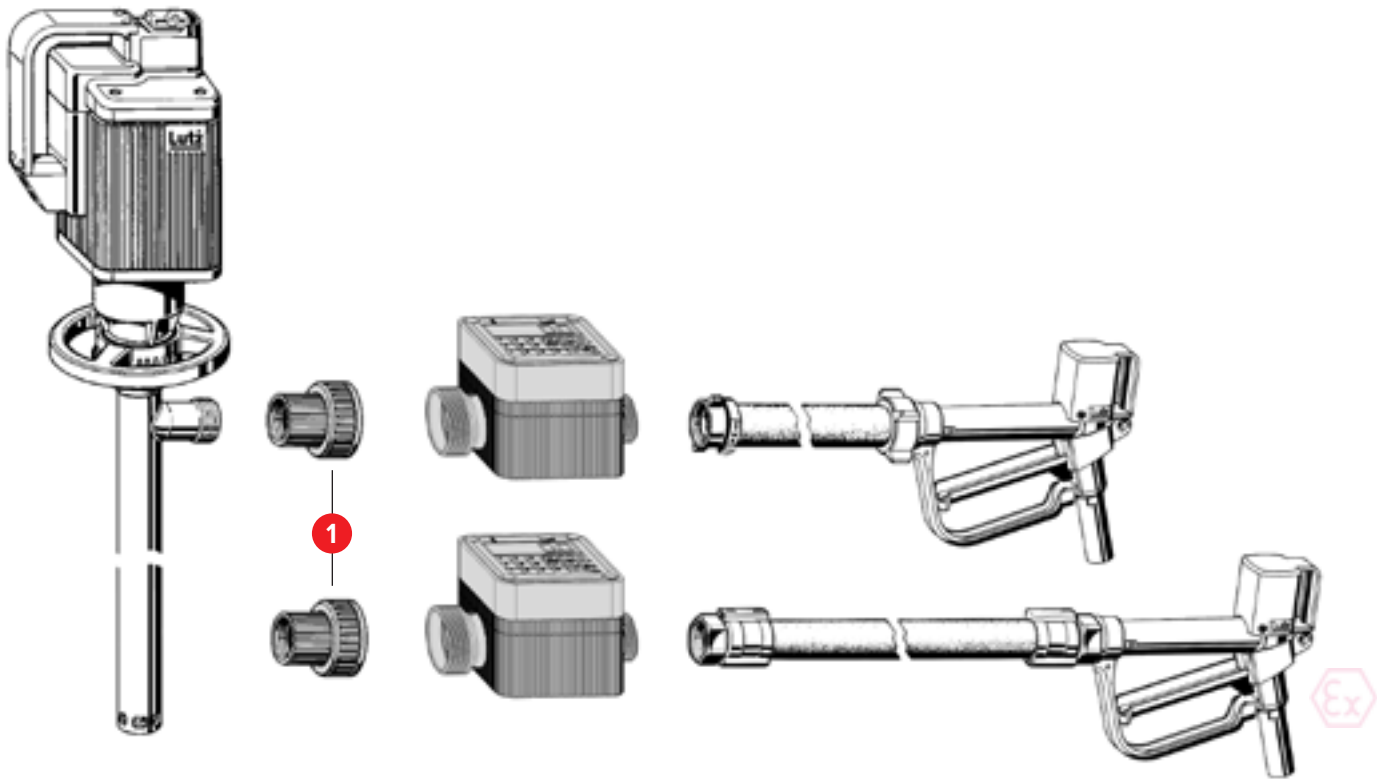
for mobile and stationary applications



## Take control


The comprehensive range of accessories makes it possible to install the flow meter onto a pump or into a pipe line. With appropriate connecting cables the system is immediately ready for use.

## Flow meter TSB without volume preselection



... Flange version

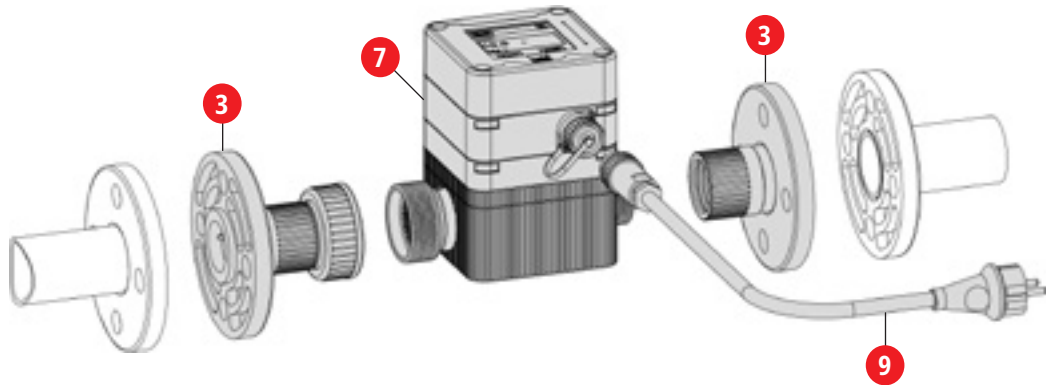
**1** Drum pump connection

Product detail	Specification	Order-No.
	<p><b>1 Drum pump connection</b> Connects the flow meter TSB to a drum and container pump.</p> <p>PPO/FPM G 1 1/4 IG for ST            PPS/FPM-FEP G 1 1/4 IG for LM, UN            Stainless steel/PTFE G 1 1/4 - G 1 1/4 IG for VA            Stainless steel/PTFE G 1 1/4 - G 1 1/2 IG for VA</p>	<p><b>0211-130</b>  <b>0211-132</b> ●  <b>0211-211</b> ●  <b>0211-214</b> ●</p>

FPM is a registered trademark of DuPont Performance Elastomers.

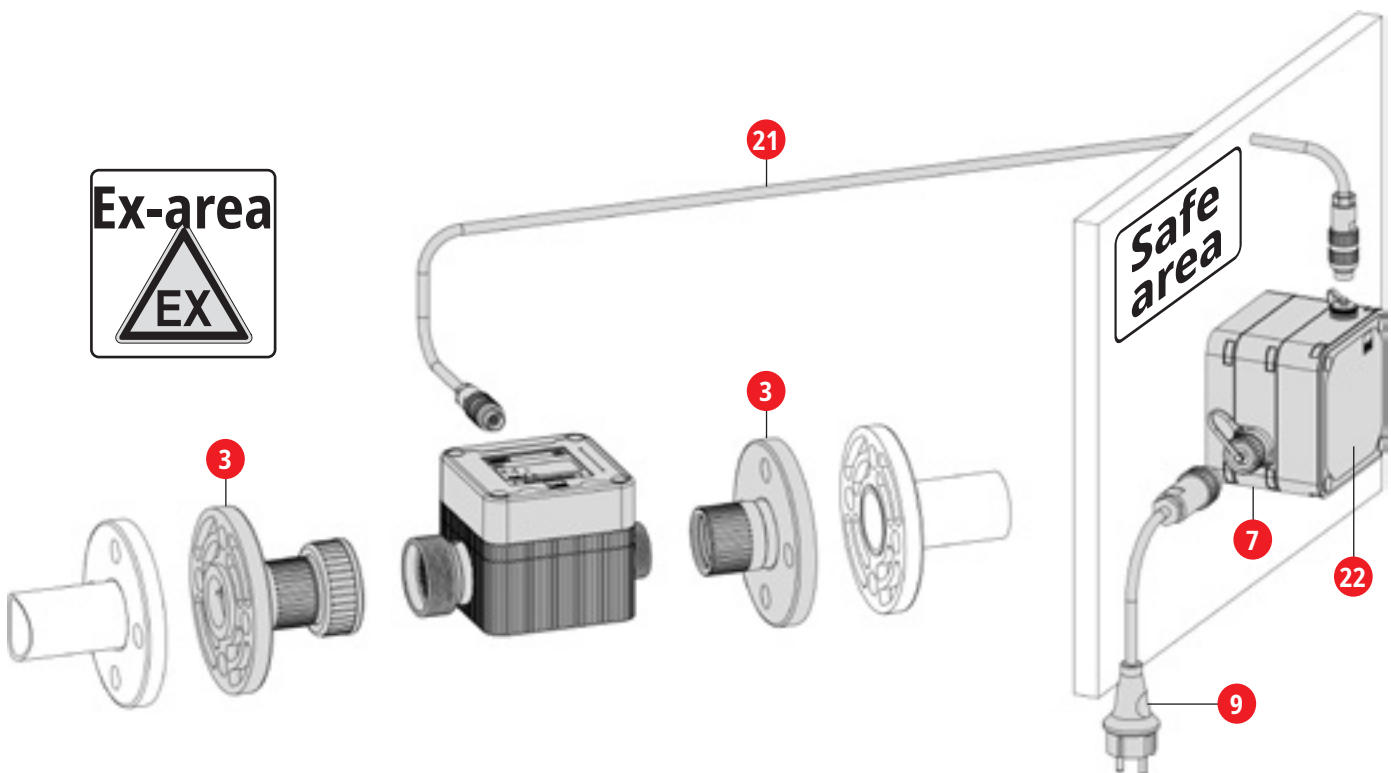
# Accessories

## Flow meter TS without volume preselection



... with power supply unit in plant engineering

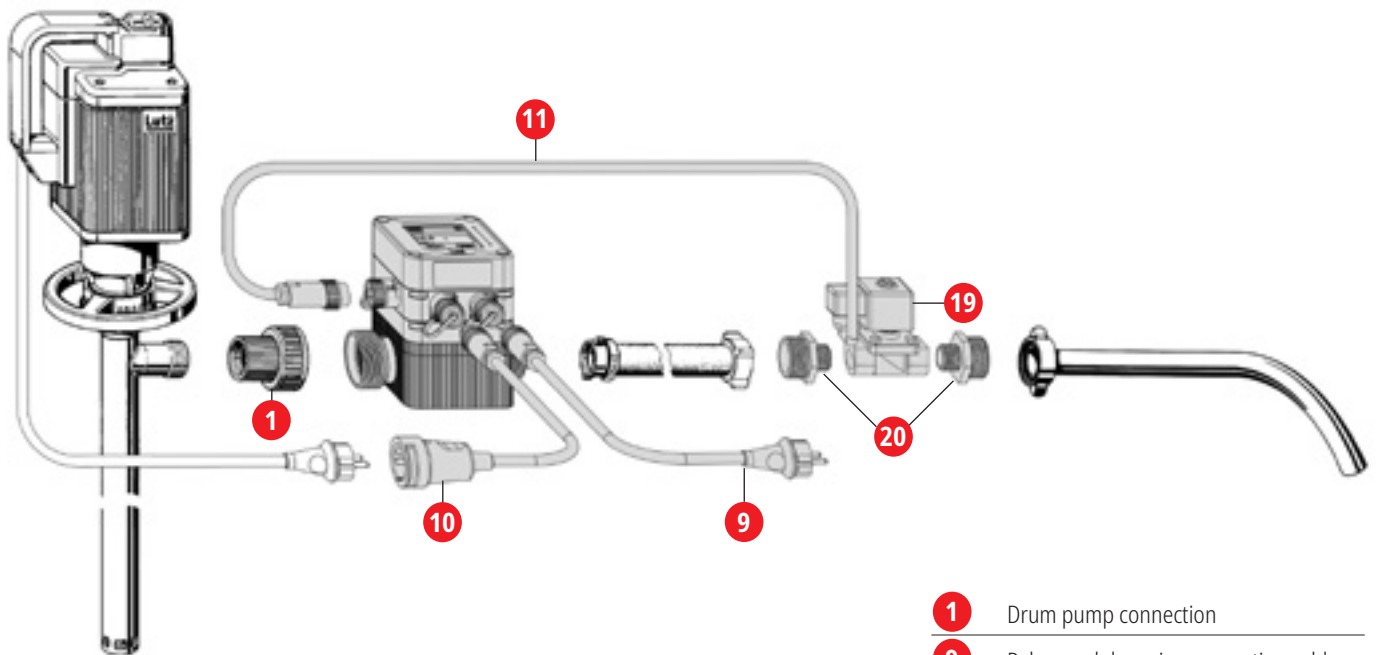
- 3** Flange connection
- 7** Power supply unit NG10
- 9** Mains connection cable



... with power supply unit in plant engineering (Ex)

- 3** Flange connection
- 7** Power supply unit NG10
- 9** Mains connection cable
- 21** Data cable
- 22** Protection cover SH10

## Flow measurement with volume preselection



... Thread version

- 1** Drum pump connection

---

- 9** Relay module mains connection cable

---

- 10** Motor/Slow connection cable, single

---

- 11** Main valve connection cable

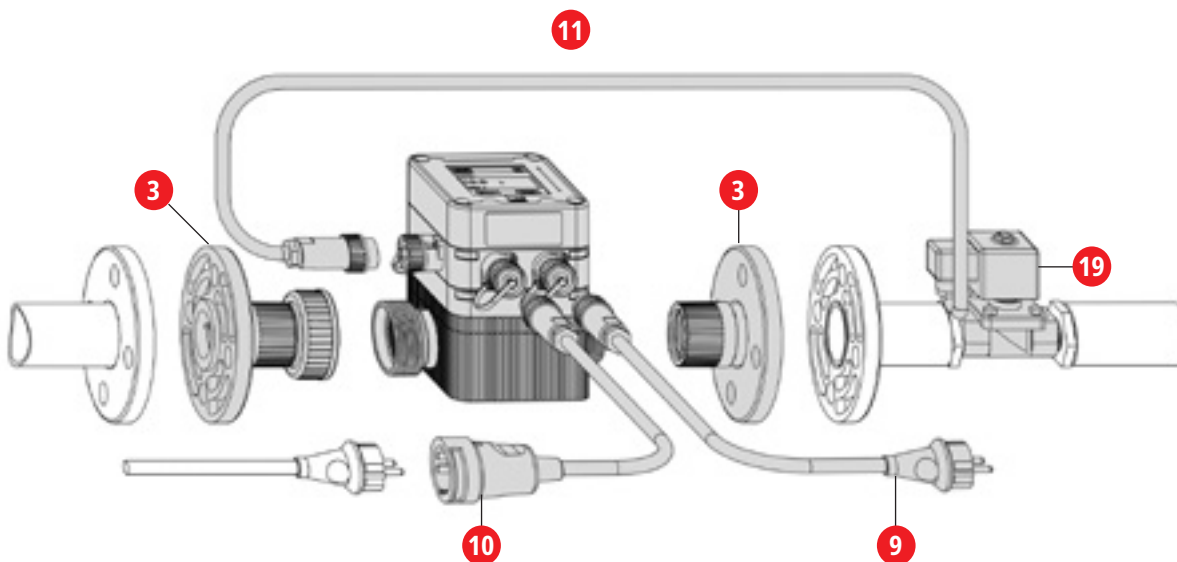
---

- 19** Solenoid valve

---

- 20** Double nipple

---

... Flange version

- 3** Flange connection

---

- 9** Relay module mains connection cable

---

- 10** Motor/Slow connection cable, single

---

- 11** Main valve connection cable

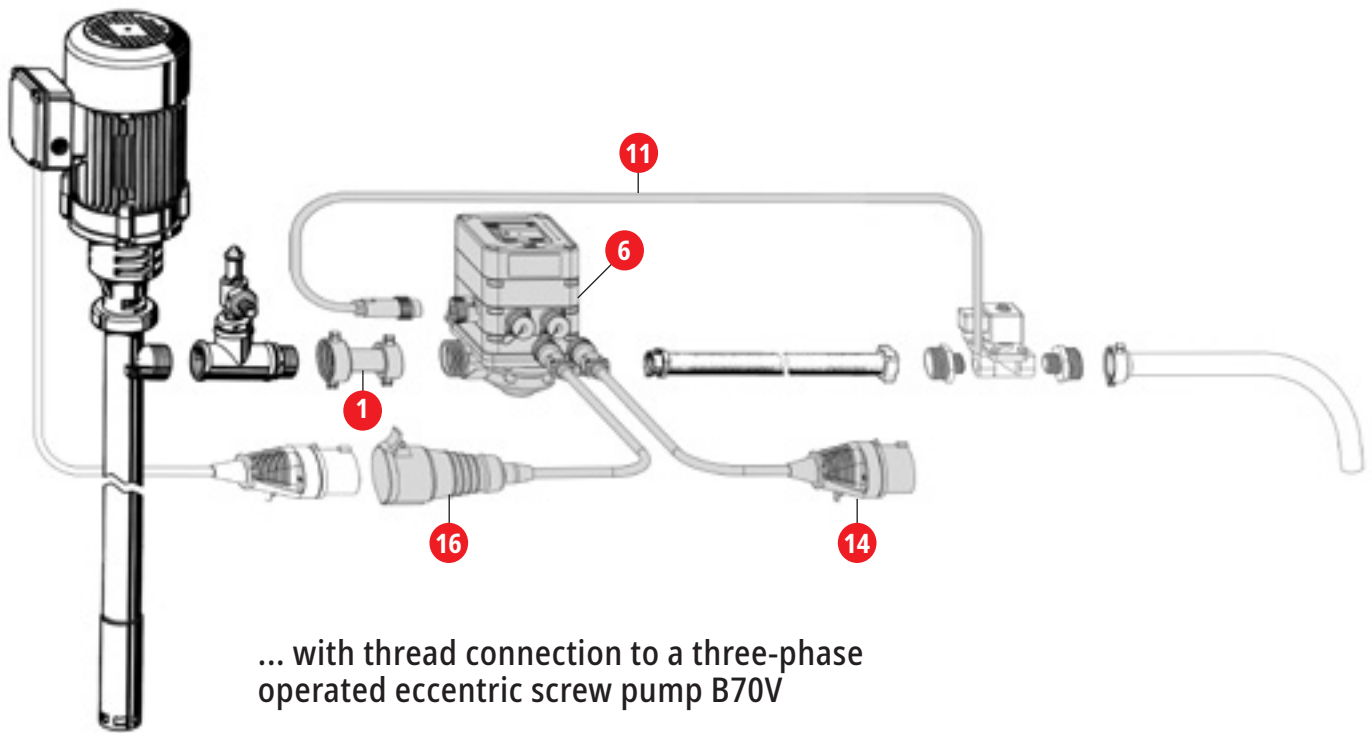
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- 19** Solenoid valve

---

# Accessories

Flow measurement with volume preselection ...

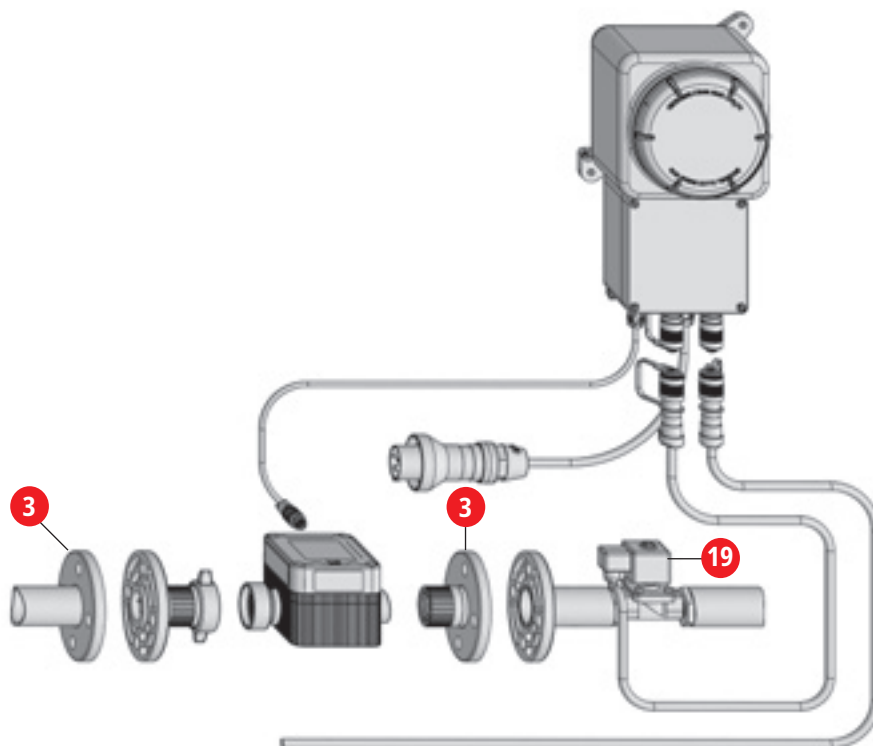
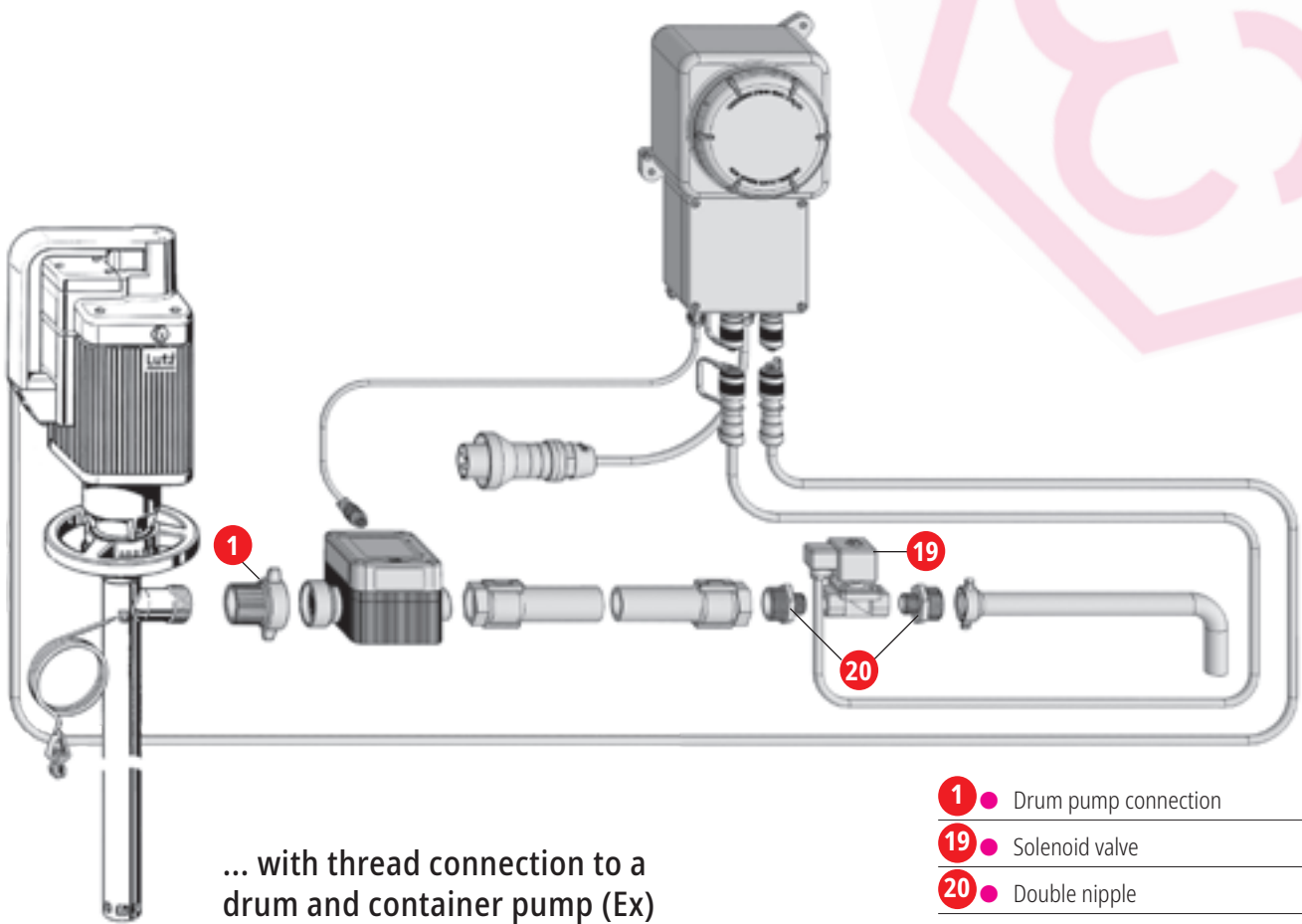


... with thread connection to a three-phase operated eccentric screw pump B70V

- 1** Drum pump connection
- 6** Relay module RM30
- 11** Main valve connection cable
- 14** Mains connection cable RM30 400 V
- 16** Connection cable motor RM30 400 V








Flow measurement with volume preselection ...



# Accessories

## Connection fittings

Product detail	Specification	Order-No.
	<p><b>1 Drum pump connection</b> Connects the flow meter to a drum and container pump.</p> <p>PPO/FPM G 1 1/4 inner tread for ST10, SL10            PPS/FPM-FEP G 1 1/4 inner tread for LM10, UN10            Stainless steel/PTFE G 1 1/4 - G 1 1/4 IT for VA10            Stainless steel/PTFE G 1 1/4 - G 1 1/2 IT for VA10</p>	<p><b>0211-130</b>  <b>0211-132</b> ●  <b>0211-211</b> ●  <b>0211-214</b> ●</p>
	<p><b>1 Drum pump connection</b> Connects the flow meter to an eccentric screw pump B70-V or HD-E</p> <p>PP/PTFE G 1 OT x G 1 1/4 IT for HDO250 P            Stainless steel/PTFE G 1 OT* x G 1 1/4 IT* for HDO250            Stainless steel/PTFE G 1 OT* x G 1 1/2 IT* for HDO250</p>	<p><b>0211-332</b>  <b>0211-330</b> ●  <b>0211-331</b> ●</p>
	<p><b>2 Double nipple</b> Connects the flow meter to a pipeline system</p> <p>PP G 1 OT x G 1 1/4 AG, for drum pump connection G 1 OT x G 1 1/4 IT            Stainless steel G 1 OT x G 1 1/4 OT, for drum pump connection G 1 OT x G 1 1/4 IT            Stainless steel G 1 OT x G 1 1/2 OT, for drum pump connection G 1 OT x G 1 1/2 IT</p> <p>*Spacer ring 0231-545 is additionally required</p>	<p><b>5000-070</b>  <b>5000-073*</b>  <b>0211-340*</b></p>
	<p><b>3 Flange connection</b> Connects the flow meter to a pipeline system.</p> <p>PPO/FPM DN 32, PN 10, two-sided for ST10, SL10            PPS/FPM-FEP DN 32, PN 10, two-sided for LM10, UN10            Stainless steel DN 25, PN 6, one-sided for VA10            Stainless steel DN 32, PN 6, one-sided for VA10            Stainless steel DN 32, PN 10, one-sided for VA10            Stainless steel DN 40, PN 10, one-sided for VA10</p>	<p><b>0211-131</b>  <b>0211-133</b> ●  <b>0208-620</b> ●  <b>0208-621</b> ●  <b>0208-622</b> ●  <b>0208-623</b> ●</p>
	<p><b>4 Thread connection</b> Connects the flow meter to screw-type flanges or threaded screw connections.</p> <p>PPO/FPM G 1 1/4 outer tread for ST10, SL10            PPS/FPM-FEP G 1 1/4 outer tread for LM10, UN10</p>	<p><b>0211-135</b>  <b>0211-136</b> ●</p>
	<p><b>Non-return valve</b> Prevents flow back of the liquid in the hose system.</p> <p>PTFE/FPM for ST10, SL10            PTFE/FPM-FEP for LM10, UN10</p> <p>Opening pressure: 0.05 bar</p>	<p><b>0211-140</b>  <b>0211-141</b> ●</p>

FPM is a registered trademark of DuPont Performance Elastomers.  
 \*OT = Outer Thread / \*IT = Inner Thread


● Suitable for the transfer of combustible and easily inflammable liquids (e.g. ethanol, petrol) and for pumping liquids in potentially explosive environments.

Specification	Order-No.	Product detail
<p><b>5 Relay module RM10</b></p> <p>Facilitates volume preselection in combination with the appropriate connection cables.</p> <p>220-230 V, 50-60 Hz, II (2) G [Ex ib] IIC</p>	<p>for ST10, SL10, VA10 HDO080, HDO120, HDO200, HDO250, HDO400, HDO500</p> <p><b>0230-200</b></p>	
<p><b>5 Relay module Ex-RM10dK (complete version)</b></p> <p>Facilitates the filling with volume preselection in Ex-areas. Ex-plug-type connections „mini CLIX®/eXLink-System®“ With 5 m connecting cable and 3-pole ex-plug (CEAG), incl. data line 5 m and coupling plug 14-pole.</p> <p>220-230 V, 50-60 Hz, II 2G Ex de [ib Gb] IIC T6 Gb</p>	<p>for LM10, UN10, VA10 HDO080Ex, HDO120Ex, HDO200Ex, HDO250Ex, HDO400Ex, HDO500Ex</p> <p><b>0230-251 ●</b></p>	
<p><b>5 Relay module Ex-RM10dB (basic version)</b></p> <p>Facilitates volume preselection in ex-areas. Without cables, accessories on request, incl. data line 5 m and coupling plug 14-pole.</p> <p>220-230 V, 50-60 Hz, II 2G Ex de [ib Gb] IIC T6 Gb</p>	<p>for LM10, UN10, VA10 HDO080Ex, HDO120Ex, HDO200Ex, HDO250Ex, HDO400Ex, HDO500Ex</p> <p><b>0230-250 ●</b></p>	
<p><b>6 Relay module RM30</b></p> <p>Facilitates volume preselection in combination with the appropriate connection cables. For controlling rotary current and capacitor motors.</p> <p>400 V, 1.5 kW, 50 Hz resp. 230 V, 0.8 kW, 50 Hz II (2) G [Ex ib] IIC</p>	<p>for ST10, SL10, VA10 HDO080, HDO120, HDO200, HDO250, HDO400, HDO500</p> <p><b>0230-220</b></p>	
<p><b>7 Power supply unit NG10 230V</b></p> <p>Supplies the control unit with power (instead of batteries). This function is already included in relay modules.</p> <p>220-230 V, 50-60 Hz, II (2) G [Ex ib] IIC</p>	<p>for ST10, SL10, VA10 HDO080, HDO120, HDO200, HDO250, HDO400, HDO500</p> <p><b>0230-230</b></p>	








eXLink-System® is a registered trademark of Cooper Crouse-Hinds GmbH

# Accessories

for volume preselection

Product detail	Specification	Order-No.
	<p><b>Communication module</b> allows the communication with external control systems, analog output (0-20mA, 4-20mA, 0-10 V), analog output, RS485 interface, alarm output, Digital input (external start/stop)</p> <p><b>8 Communication module KM10K (complete version)</b> with cable protective covering for ST10, SL10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500</p> <p><b>8 Communication module Ex-KM10K</b> with cable protective covering II 2G Ex ib IIC T4 for LM10, UN10, VA10, HDO080Ex, HDO120Ex, HDO200Ex, HDO250Ex, HDO400Ex, HDO500Ex</p>	<p><b>0230-101</b></p> <p><b>on request ●</b></p>
	<p><b>9 Power cable relay module</b> 5 m long 230 V, 50 Hz</p>	<p>for RM10, NG10 <b>0211-155</b></p>
	<p><b>10 Connecting cable Motor/Slow 1-way</b> 0.5 m long 230 V, 50 Hz</p>	<p>for RM10 <b>0211-153</b></p>
	<p><b>Connecting cable motor/slow 3-way</b> 0.5 m long 230 V, 50 Hz</p>	<p>for RM10 <b>0211-154</b></p>




● Suitable for the transfer of combustible and easily inflammable liquids (e.g. ethanol, petrol) and for pumping liquids in potentially explosive environments.

Specification	Order-No.	Product detail
<b>11 Connecting cable main valve</b> 5 m long 230 V, 50 Hz for RM10 and RM30	<b>0211-150</b>	
<b>12 Connecting cable slow-valve</b> 5 m long 230 V, 50 Hz for RM10	<b>0211-151</b>	
<b>13 Extension cable</b> 5 m long 230 V, 50 Hz for RM10	<b>0211-152</b>	
<b>14 Power cable RM30 400 V</b> 5 m long 400 V, 50 Hz, 5-wire for RM30	<b>0211-388</b>	
<b>15 Connector relay module</b> for individual wiring  <b>Plug for motor-/valve connection</b> 230 V, 50 Hz, 4-pole 230 V, 50 Hz, „mini CLIX®/eXLink-System®“  <b>Coupling for mains connection</b> 230 V, 50 Hz, 4-pole	for RM10 for Ex-RM10mK   for RM10	<b>0336-095</b> <b>0336-108*</b>   <b>0336-099</b>
<b>16 Connecting cable motor RM30 400 V</b> 0.6 m long 400 V, 50 Hz, 5-pole for RM30	<b>0211-386</b>	
<b>17 Power cable RM30 230 V</b> 5 m long 230 V, 50 Hz for RM30	<b>0211-387</b>	
<b>18 Connecting cable motor RM30 230 V</b> 0.5 m long 230 V, 50 Hz for RM30	<b>0211-385</b>	

\*special Crimp tool required for connection. eXLink-System® is a registered trademark of Cooper Crouse-Hinds GmbH

# Accessories

for volume preselection

Product detail	Specification	Order-No.
	<p><b>19 Solenoid valve brass</b> FPM seal, connection G 3/4 inner thread 230 V, 50 Hz</p>	<p>for RM10 and RM30 <b>0211-096</b></p>
	<p><b>19 Solenoid valve stainless steel</b> FPM seal, connection G 3/4 inner thread 230 V, 50 Hz</p>	<p>for RM10 and RM30 <b>0211-097</b></p>
	<p><b>19 Solenoid valve PVC*</b> FPM seal, connection G 3/4 inner thread 230 V, 50 Hz</p>	<p>for RM10 and RM30 <b>0211-098</b></p>
	<p><b>19 Solenoid valve brass, Ex</b> PTFE seal, connection G 3/4 inner thread, incl. 5 m connecting cable and „mini CLIX®/eXLink®-plug“ 230 V, 50 Hz, II 2G Ex eb mb IIC T3 Gb</p>	<p>for Ex-RM10mK <b>0211-396</b> ●</p>
	<p><b>19 Solenoid valve stainless steel, Ex</b> PTFE seal, connection G 3/4 inner thread, incl. 5 m connecting cable and „mini CLIX®/eXLink®-plug“ 230 V, 50 Hz, II 2G Ex eb mb IIC T3 Gb</p>	<p>for Ex-RM10mK <b>0211-395</b> ●</p>
	<p><b>20 Double nipple PP</b> G 3/4 outer thread – G 1 1/4 outer thread</p> <p><b>Double nipple brass</b> G 3/4 outer thread – G 1 1/4 outer thread</p> <p><b>Double nipple stainless steel</b> G 3/4 outer thread – G 1 1/4 outer thread</p>	<p><b>0211-606</b></p> <p><b>0204-346</b> ●</p> <p><b>0204-347</b> ●</p>

\*Non-return valve (0211-140 or 0211-141) for full hose system needed.

● Suitable for the transfer of combustible and easily inflammable liquids (e.g. ethanol, petrol) and for pumping liquids in potentially explosive environments.

Specification	Order-No.	Product detail
<p><b>21 Data cable</b> Connects the modules in the case of decentralised installation.</p> <p>14-pole, 5 m long      for ST10, SL10, LM10, UN10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500      <b>0230-306</b> ●</p> <p>14-pole, 10 m long      for ST10, SL10, LM10, UN10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500      <b>0230-309</b> ●</p> <p><b>Data cable SPS</b> for the connection of a basic flow meter with protection cap onto a PLC. 14-pole, with a free cable end, 5 m long.      <b>0230-317</b> ●</p>		
<p><b>22 Protection cover SH10 with 1 data socket</b> Protects the modules in the case of decentralised installation.      for ST10, SL10, LM10, UN10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500      <b>0230-350</b> ●</p> <p><b>22 Protection cover SH20 with 2 data socket</b> Protects the modules in the case of decentralised installation.      for ST10, SL10, LM10, UN10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500      <b>0230-351</b> ●</p>		
<p><b>Pulse converter</b> for a signal amplification, must be mounted on the basic flow meter if the distance to the next module is more than 5 m</p> <p><b>23 Pulse converter IW10 with 1 data socket</b> for ST10, SL10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500      <b>0230-352</b></p> <p><b>23 Pulse converter IW20 with 2 data socket</b> for ST10, SL10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500      <b>0230-353</b></p>		
<p><b>24 All-purpose plate</b> For wall-mounting or as a heat protection plate      for ST10, SL10, LM10, UN10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500      <b>0230-304</b> ●</p>		
<p><b>25 Wall bracket set</b> Additional clamp fixing for DIN rails (TS 35) EN 50022      for ST10, SL10, LM10, UN10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500      <b>0230-307</b> ●</p> <p>Installation together with all-purpose plate 0230-304. (all-purpose plate not included in wall bracket set)</p>		
<p><b>26 Hose bracket for control unit</b> For decentralised installation of the modules on a hose line.      for ST10, SL10, LM10, UN10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500      <b>0230-303</b> ●</p>		

# Accessories

Product detail	Specification		Order-No.
	<b>27 Control unit BE10</b>	for ST10, SL10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500	<b>0230-000</b>
	<b>27 Control unit BE10V</b> With compound-filled electronics	for ST10, SL10, VA10, HDO080, HDO120, HDO200, HDO250, HDO400, HDO500	<b>0230-001</b>
	<b>27 Control unit Ex-BE10B</b> II 2G Ex ib IIB T4	for LM10, UN10, VA10, HDO080Ex, HDO120Ex, HDO200Ex, HDO250Ex, HDO400Ex, HDO500Ex	<b>0230-010</b> ●
	<b>27 Control unit Ex-BE10BV</b> With compound-filled electronics II 2G Ex ib IIB T4	for LM10, UN10, VA10, HDO080Ex, HDO120Ex, HDO200Ex, HDO250Ex, HDO400Ex, HDO500Ex	<b>0230-011</b> ●
	<b>27 Control unit Ex-BE10C</b> II 2G Ex ib IIC T4	for LM10, UN10, VA10, HDO080Ex, HDO120Ex, HDO200Ex, HDO250Ex, HDO400Ex, HDO500Ex	<b>0230-020</b> ●
	<b>27 Control unit Ex-BE10CV</b> With compound-filled electronics II 2G Ex ib IIC T4	for LM10, UN10, VA10, HDO080Ex, HDO120Ex, HDO200Ex, HDO250Ex, HDO400Ex, HDO500Ex	<b>0230-021</b> ●

● Suitable for the transfer of combustible and easily inflammable liquids (e.g. ethanol, petrol) and for pumping liquids in potentially explosive environments.






## Basic flow meter for decentralised assembly and external data evaluation

Given larger distances between the measuring and control point or installation locations difficult to access in the plant, the individual modules (basic flow meter, operating unit, relay module, etc.) can be installed in different locations. The data transfer between the components is

established by data cable, protective cover/pulse converter and plug connection without awkward and complicated wiring.

For data transmission to an external signal processor (e.g. SPS), a communication module is necessary.

Specification	Order No.	Product detail
<p><b>28 Basic flow meter ST10 (FPM)</b> PPO/PPS/BaFe/FPM</p> <p><b>Basic flow meter SL10 (FPM)</b> PPO/PPS/FPM</p> <p><b>Basic flow meter LM10 (FPM-FEP)</b> PPS/LCP/BaFe/FPM-FEP II 2G T4</p> <p><b>Basic flow meter UN10 (FPM-FEP)</b> PPS/LCP/FPM-FEP II 2G T4</p>	<p><b>0230-500</b></p> <p><b>0230-510</b></p> <p><b>0230-520 ●</b></p> <p><b>0230-530 ●</b></p>	
<p><b>28 Basic flow meter VA10 (FPM-FEP)</b> Stainless steel 1.4571/PTFE/FEP II 2G T4</p>	<p><b>0230-540 ●</b></p>	
<p><b>28 Basic flow meter HDO</b> II 2G Ex h IIB T4 Gb (Stainless steel/Alu)</p>	<p><b>on request ●</b></p>	

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● Suitable for the transfer of combustible and easily inflammable liquids (e.g. ethanol, petrol) and for pumping liquids in potentially explosive environments.

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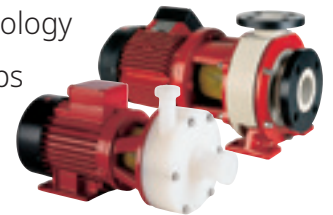
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