

Turbine Wheel Flow Meter for Liquids



- Measuring ranges:
5-30 to 50-750 l/min. water
- Measuring accuracy:
±2.5 % f.s.
- pmax: 40 bar, tmax: 80 °C
- Connection:
G 1/2 to G 3 female thread
1/2 NPT to 3 NPT female
thread
Weld-on sleeves:
DN 25 to DN 80
- Material:
aluminium bronze,
stainless steel
- Viscosity range:
low viscous
- Output:
pulses, 4-20 mA,
LED display, contacts



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Model:
 DPE

Description

The KOBOLD flow meter model DPE is used for measuring and monitoring liquids. The device works according to the well-known blade wheel principle. The six vane blade wheel is retained axially in a high-quality sapphire bearing. The sensor is supplied ready-to-install with pipe fittings or with weld-on sleeves.

The blade wheel is set in motion by the flowing medium. Magnets are embedded hermetically sealed in the ends of the blade wheels. The magnets generate electrical pulses in a Hall-effect sensor mounted outside the flow area.



Fields of application

- cooling water monitoring
- general mechanical engineering
- waste water treatment
- all heavy goods industry
- chemical industry

Technical details

Measuring accuracy:	$\pm 2.5\%$ f. s.
Process temperature:	max. 80 °C
Ambient temperature:	max. 80 °C
Max. operating pressure:	PN 40/20 °C
Max. pressure loss:	DRB- to 05: 0.05 bar DRB- to 10, DRB-..15: 0.03 bar DRB- to 20: 0.04 bar DRB- to 25: 0.02 bar DRB- to 30: 0.01 bar
Protection:	IP 65

Materials:

Housing:	aluminium bronze stainless steel 1.4581
Seals:	aluminium bronze version: NBR Stainless steel version: Viton
Turbine wheel:	PVDF
Axle:	hard metal
Bearing:	ceramic

Electronics

- **Frequency output**
 - Power supply: 24 V_{DC} $\pm 20\%$
 - Power consumption: 10 mA
 - Pulse output: PNP, open collector, max. 25 mA
 - Electrical connection: plug connector M12x1
- **Frequency output with frequency divider**
 - Power supply: 24 V_{DC} $\pm 20\%$
 - Power consumption: 15 mA
 - Pulse output: PNP, open collector, max. 25 mA
 - Electrical connection: plug connector M12x1
 - Division ratio: 1:2, 1:4, others upon request
- **Analogue output (plug-on display option)**
 - Power supply: 24 V_{DC} $\pm 20\%$
 - Output: 0-20 mA or 4-20 mA, 2- or 3-wire
 - Max. load: 500 ohm
 - Electrical connection: plug connector M12x1 or DIN 43 650
 - Option: plug-on display (with plug connector DIN 43 650 and 4-20 mA output only)
- **Compact electronics**
 - Display: 3-segment LED
 - Analogue output: (0)4-20 mA adjustable
 - Switching outputs: 1 (2) semiconductor PNP or NPN, factory set
 - Contact operation: N/C/N/O contact programmable with 2 buttons
 - Setting: with 2 buttons
 - Supply: 24 V_{DC} $\pm 20\%$, 3-wire
 - Electrical connection: plug connector M12x1
- **Pointer indicator with analogue output**
 - Housing: aluminium
 - Display: moving-coil instrument, 240° display
 - Power supply: 24 V_{DC} $\pm 20\%$
 - Output: 0-20 mA or 4-20 mA, 3-wire
 - Max. load: 250 ohm
 - Electrical connection: plug connector M12x1
- **ADI electronics**
 - Display: bar graph, 3.5-segment digital or combination display
 - Analogue output: 4-20 mA
 - Two switching outputs: relay/changeover contacts max. 115/230 V_{AC}, 5 A resistive load max. 30 V_{DC}/5 A
 - Option: 2 open collector 5-50 V_{DC}, I_{total} = 50 mA
 - Setting: via 3 buttons
 - Power supply: 230/115/48/24 V_{AC}, 24 V_{DC}
 - Electrical connection: pluggable terminal block PG-cable glands

See brochure Z2 for more technical details on ADI evaluating electronics.



Order details (example: DPE-1105 G4 F300)

with pipe fitting							Evaluating electronics			
Measuring range max. 3 m/s		Flow rate max. 10 m/s	Model		Connection					
l/min. water	app. frequency (Hz) f.s.	l/min. water	Mat. alum. bronze	Material st. steel	Standard fem. thread	Special fem. thread				
5-30	80	100	DPE-1105..	DPE-1205..	G4=G 1/2	N4=1/2 NPT				
10-50	80	180	DPE-1110..	DPE-1210..	G5=G 3/4	N5=3/4 NPT				
20-80	65	230	DPE-1115..	DPE-1215..	G6=G 1	N6=1 NPT				
25-250	140	600	DPE-1120..	DPE-1220..	G8=G 1 1/2	N8=1 1/2 NPT				
30-350	135	1000	DPE-1125..	DPE-1225..	G9=G 2	N9=2 NPT				
50-750	110	1600	DPE-1130..	DPE-1230..	GB=G 3	NB=3 NPT				
With installation adapter not available with compact/ADI electronics										
Meas. range m/sec.	app. frequency (Hz) at max. value	Flow rate max. m/sec.	Model		Connection					
			Mat. alum. bronze	Material st. steel	for nominal pipe size					
0-3	65 (at DN 25) 140 (at DN 40) 135 (at DN 50) 110 (at DN 80)	10	-	DPE-1200..	W6=DN 25 W8=DN 25...DN 80					

Display	Supply	Output	Contacts
B=Bar graph	0=230 V _{AC}	0=without	0=without
D=Digital	4=115 V _{AC}	F=scalable frequency	2=2 change- over contacts
K=Bargraph/ digital display	2= 24 V _{AC} 1= 48 V _{DC} 3= 24 V _{DC}	1=0-10 V 2=0-20 mA 4=4-20 mA	6=2 open collectors

Plug-on display

for model DPE...L442 (with 4-20 mA output and DIN plug connector)

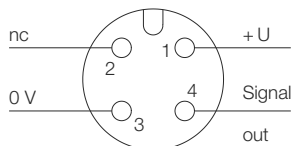
Description	Order number
4-digit LED, connector DIN 43650, 2-wire, supply through analogue output	AUF-1000
as above however with additional open collector output	AUF-1001

Weights

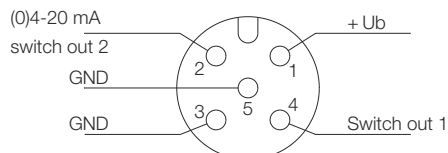
Sensor		Electronics	
Type	Weight	Type	Weight
1/2"	app. 750 g	Frequency output	130 g
3/4"	app. 1050 g	Analogue output	130 g
1"	app. 900 g	Compact electronics	app. 650 g
1 1/2"	app. 1.2 kg	Pointer indicator	550 g
2"	app. 1.5 kg	ADI electronics 230 V	1950 g
3"	app. 3 kg	ADI electronics 240 V	1400 g

Electrical connection

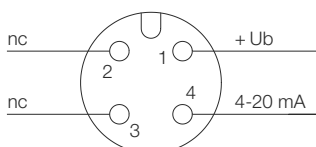
DPE-..F., DPE-..Z., DPE-..L3..3-wire



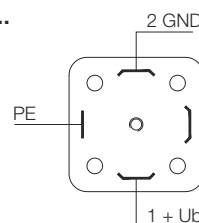
DPE-..C..



DPE-..L342.. 2-wire



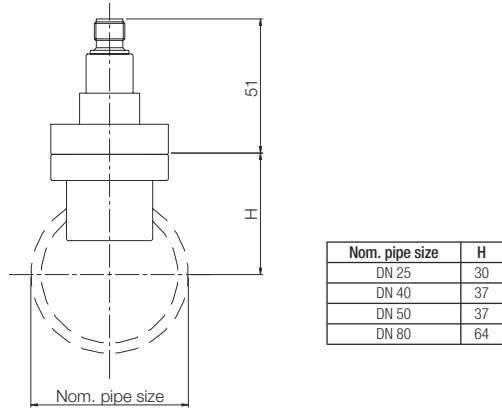
DPE-..L4..



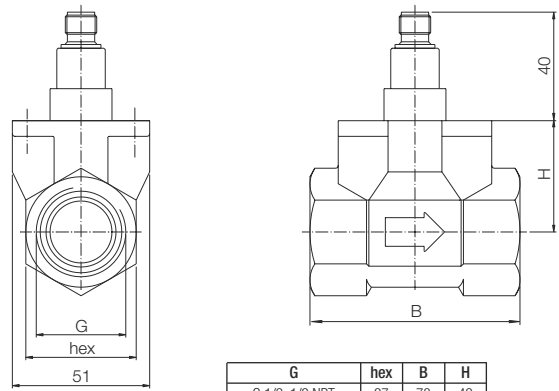


Dimensions

Model: DPE-..W.. (with weld-on sleeve)



Model: DPE-...L3.. / DPE-...F.. (with analogue output)



Model: DPE-..L4..

(with analogue output and plug-on display option)

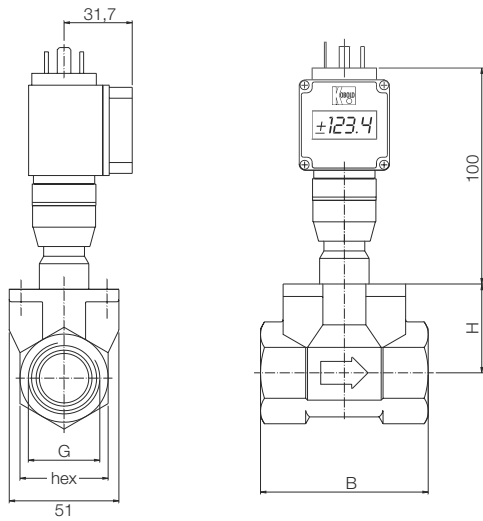


Table see model: DPE-..L3..

Model: DPE-..C.. (with compact electronics)

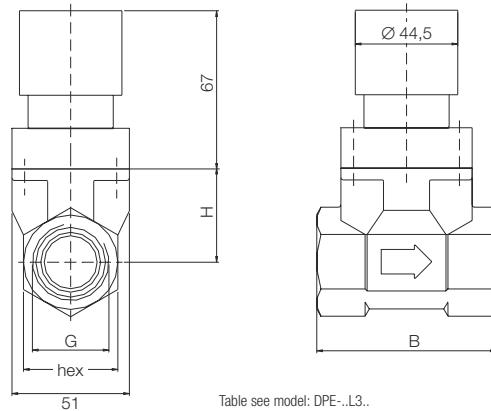


Table see model: DPE-..L3..

Model: DPE-..B.., ..D.., ..K.. (with ADI electronics)

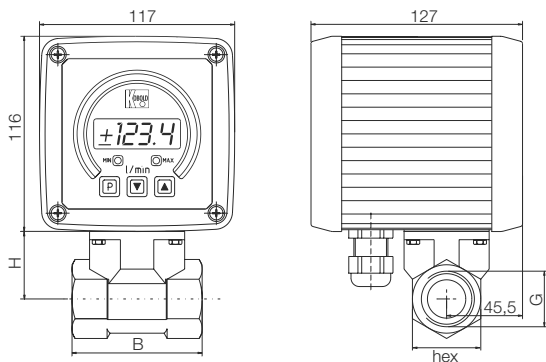


Table see model: DPE-..L3..

Model: DPE-..Z.. (with pointer indicator)

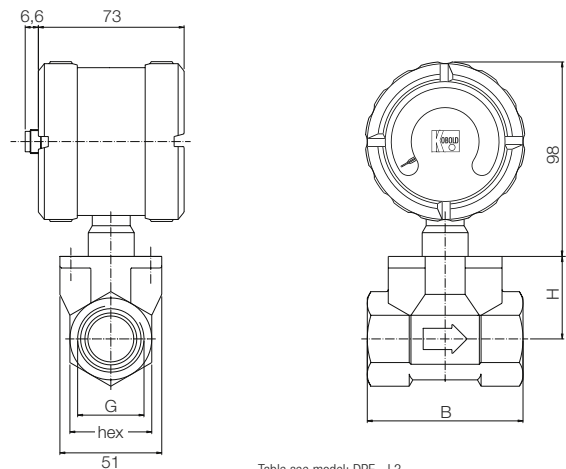


Table see model: DPE-..L3..