

Turbine Wheel Flow Meter for Liquids



- Measuring ranges:
5 - 30 to 50 - 750 L/min water
- Measuring accuracy:
± 2.5 % f.s.
- p_{max}: PN 40, t_{max}: 80 °C
- Connection:
G 1/2 to G 3 female thread
1/2 NPT to 3 NPT female
Weld-on sleeves:
DN 25 to DN 80
- Material:
aluminum 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:	± 2.5% f.s.
Process temperature:	max. 80 °C
Ambient temperature:	max. 80 °C
Max. operating pressure:	PN 40/20 °C PN 16 (DPE-1200W)
Max. pressure loss:	DPE- to 05: 0.05 bar DPE- to 10, DPE-..15: 0.03 bar DPE- to 20: 0.04 bar DPE- to 25: 0.02 bar DPE- to 30: 0.01 bar
Protection:	IP 65
Materials:	
Housing:	aluminium bronze stainless steel 1.4581
Seals:	aluminium bronze version: NBR Stainless steel version: FPM
Turbine wheel:	PVDF
Axle:	hard metal
Bearing:	sapphire

Electronics

- **Frequency output (...F300)**
 - Power supply: 12 - 28 V_{DC}
 - Power consumption: 10 mA
 - Pulse output: PNP, open collector, max. 25 mA
 - Electr. connection: plug connector M12x1
- **Frequency output with frequency divider**
 - Power supply: 24 V_{DC} ± 20%
 - Power consumption: 15 mA
 - Pulse output: PNP, open collector, max. 25 mA
 - Electr. connection: plug connector M12x1
 - Division ratio: 1... 1/128 factory set
- **Analogue output (plug-on display option)**
 - Power supply: 24 V_{DC} ± 20%
 - Output: 0 - 20 mA or 4 - 20 mA, 2- or 3-wire
 - Max. load: 500 Ω
 - Electr. 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, max. 500 Ω
 - Switching outputs: 1 (2) semiconductor PNP or NPN, factory set
 - Contact operation: N/C / N/O contact, frequency programmable
 - Setting: with 2 buttons
 - Supply: 24 V_{DC} ± 20%, 3-wire, app. 100 mA
 - Electr. connection: plug connector M12x1
- **Pointer indicator with analogue output**
 - Housing: aluminium
 - Display: moving-coil instrument, 240° display
 - Power supply: 24 V_{DC} ± 20%
 - Output: 0 - 20 mA or 4 - 20 mA, 3-wire
 - Max. load: 250 Ω
 - Electr. connection: plug connector M12x1
- **ADI electronics**
 - Display: bar graph, 3.5-segment digital or combination display, batch systems
 - Analogue output: 4 - 20 mA
 - 2 switching outputs: relay/changeover contacts max. 115/230 V_{AC}, 5 A resistive load max. 30 V_{DC}/5 A or 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}
 - Electr. 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 fittings						Evaluating electronics				
Measuring range max. 3 m/s [L/min water]		Flow rate max. 10 m/s approx. [L/min water]	Model		Connection					
approx. frequency [Hz] f.s.			Material aluminium bronze	Material st. steel	Standard female thread	Special female thread	Frequency output			
5-30	80	100	DPE-1105..	DPE-1205..	..G4..= G 1/2	..N4..= 1/2 NPT	..F300=frequency output, plug connector M12 x 1 ..F320=frequency divider 1:2, plug connector M12 x 1 ..F340=frequency divider 1:4, plug connector M12 x 1 ..F390=frequency divider 1...1/128, plug connector M12 x 1			
10-50	80	180	DPE-1110..	DPE-1210..	..G5..= G 3/4	..N5..= 3/4 NPT	Analogue output			
20-80	65	230	DPE-1115..	DPE-1215..	..G6..= G 1	..N6..= 1 NPT	..L303=0-20 mA output, 3-wire, plug connector M12 x 1 ..L342=4-20 mA output, 2-wire, plug connector M12 x 1 ..L343=4-20 mA output, 3-wire, plug connector M12 x 1 ..L442=4-20 mA output, 2-wire, plug connector DIN 43 650			
25-250	140	600	DPE-1120..	DPE-1220..	..G8..= G 1 1/2	..N8..= 1 1/2 NPT	Compact electronic*			
30-350	135	1000	DPE-1125..	DPE-1225..	..G9..= G 2	..N9..= 2 NPT	..C30R=LED display, 2 x open collector, PNP, plug connector M12 x 1 ..C30M=LED display, 2 x open collector, NPN, plug connector M12 x 1 ..C34P=LED display, 4-20 mA, 1 x open collector PNP, plug connector M12 x 1 ..C34N=LED display, 4-20 mA, 1 x open collector NPN, plug connector M12 x 1			
50-750	110	1600	DPE-1130..	DPE-1230..	..G3..= G 3	..NB..= 3 NPT	Pointer indication, 240°*			
With installation adapter not available with compact/ADI electronics										
Meas. range [m/s]	approx. frequency [Hz] at max. value	max. flow rate [m/s]	Material aluminium bronze	Material st. steel	Connection for nominal pipe size		Display	Supply	Output	Contacts
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 40/DN 50 ..WB..= DN 80		..B..= Bar graph ..D..= Digital ..K..= Bar graph/digital display ..A..= batching system	..0..= 230 V _{AC} ..4..= 115 V _{AC} ..1..= 48 V _{AC} ..2..= 24 V _{AC} ..3..= 24 V _{DC}	..0..= without ..F..= scalable frequency** ..1..= 0-10 V ..2..= 0-20 mA ..4..= 4-20 mA	..0= without ..2= 2 change-over contacts ..6= 2 open collector

*Please specify flow direction in writing. **for ADI-K electronics only

Plug-on display

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

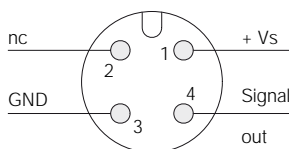
Sensor

Electronics

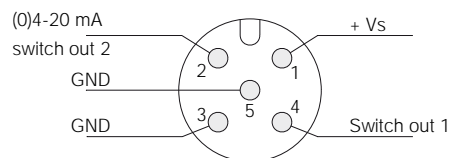
Model	Weight	Model	Weight
1/2"	approx. 750 g	Frequency output	130 g
3/4"	approx. 1050 g	Analogue output	130 g
1"	approx. 900 g	Compact electronic	app. 650 g
1 1/2"	approx. 1200 g	Pointer indication	550 g
2"	approx. 1500 g	ADI electronics 230 V	1950 g
3"	approx. 3000 g	ADI electronics 24 V	1400 g

Electrical connection

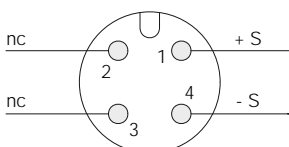
DPE-..F., DPE-..Z., DPE-..L3..3-wire



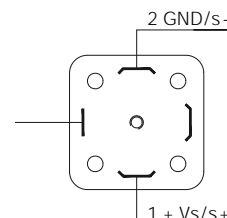
DPE-..C..



DPE-..L342 2-wire

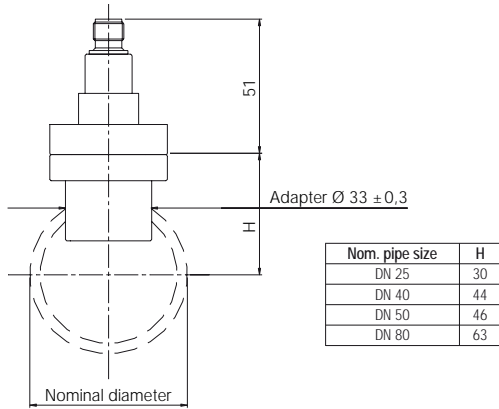


DPE-..L442

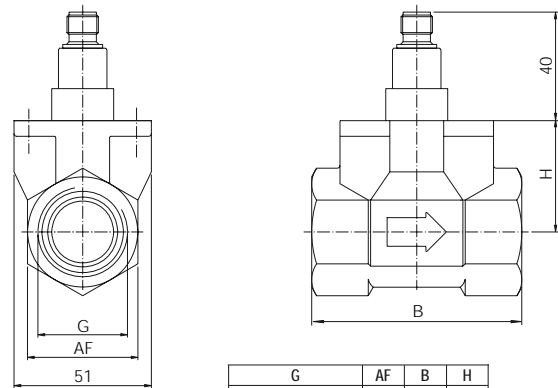


Dimensions

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

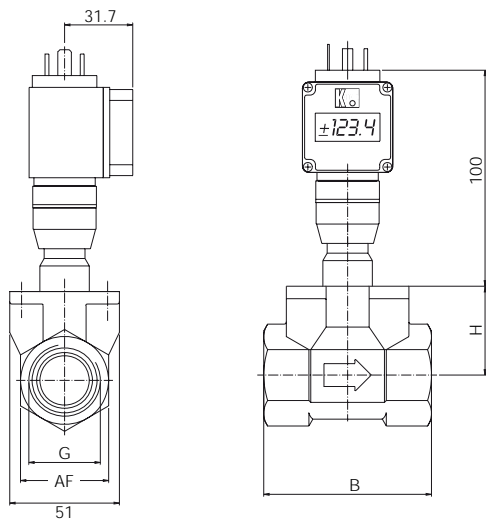


Model: DPE-...L3.. / DPE-..F.. (with analogue output)

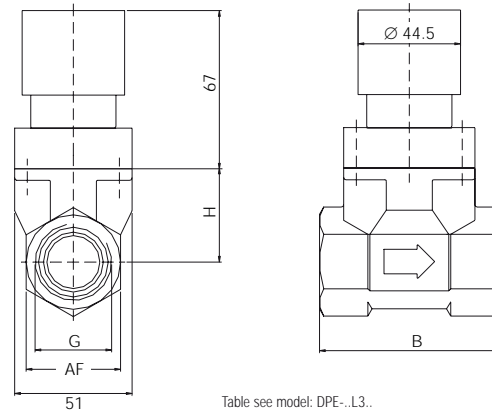


Model: DPE-..L4..

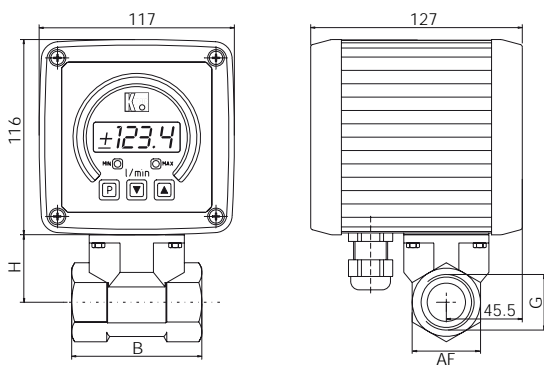
(with analogue output and plug-on display option)



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



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



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

