



# Turbine Wheel Flowmeter for liquids



measuring  
•  
monitoring  
•  
analysing

DPE



- Measuring ranges:  
5 - 30 ... 50 - 750 l/min water
- Measuring accuracy:  
± 2.5 % of full scale
- $p_{\max}$ : PN 40,  $t_{\max}$ : 80 °C
- Connection: G ½ ... G 3 female  
½" ... 3" NPT female
- Weld-on sleeves:  
DN 25 ... DN 80
- Material:  
brass, stainless steel
- Viscosity range:  
low viscous
- Output:  
pulses, 4 - 20 mA,  
LED display, contacts



S4

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**Description**

The KOBOLD flowmeter 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 % of full scale
Process temperature:	max. 80 °C
Ambient temperature:	max. 80 °C
Max. operating pressure:	PN40 / 20 °C
Max. pressure loss:	DPE-...05: 0.05 bar DPE-...10, ...15: 0.03 bar DPE-...20: 0.04 bar DPE-...25: 0.02 bar DPE-...30: 0.01 bar
Protection:	IP65

**Materials**

Housing:	brass stainless steel 1.4581
Seals:	brass version: NBR Stainless steel version: FPM
Turbine wheel:	PVDF
Axle:	hard metal
Bearing:	sapphire

**Electronics**
**● Frequency output (..F300)**

Power supply:	12-28 V <sub>DC</sub>
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 <sub>DC</sub> ± 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 <sub>DC</sub> ± 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-digit 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 <sub>DC</sub> ± 20 %, 3-wire, approx. 100 mA
Electr. connection:	plug connector M12x1

**● ADI electronics**

Display:	bar graph and 5-digit digital display
Analogue output:	(0)4...20 mA, 0-10 V <sub>DC</sub>
2 switching outputs:	relay /changeover contact, max. 250 V <sub>AC</sub> /5A resistive load, max. 30 V <sub>DC</sub> / 5A
Setting:	via 4 buttons
Supply:	100...240 V <sub>AC</sub> ± 10 % or 18...30 V <sub>AC</sub> / 10...40 V <sub>DC</sub>
Electr. connection:	pluggable terminal block via cable gland

**● DPE-...Exxx (Counter electronic)**

Display:	LCD, 2 x 8 digit, illuminated total, part and flow quantities, units selectable
Analogue output:	0(4)...20 mA adjustable
Load:	max. 500 Ω
Switching outputs:	2 relays, max. 250 V/5 A/1000 VA
Settings:	via 4 buttons
Functions:	Reset, Min./Max. memory, flow monitor, monitoring for part and total quantity, language
Supply:	24 V <sub>DC</sub> ± 20 %, 3-wire
Power consumption:	approx. 170 mA
Electr. connection:	pluggable screw terminals via cable gland

**● DPE-...Gxxx (Dosing electronic)**

Display:	LCD, 2 x 8 digit, illuminated total, part and flow quantities, units selectable
Analogue output:	0(4)...20 mA adjustable
Load:	max. 500 Ω
Switching outputs:	2 relays, max. 250 V/5 A/1000 VA
Settings:	via 4 buttons
Functions:	dosing (relay S2), start, stop, reset, fine dosing, correction amount, flow switch, total quantity, language
Supply:	24 V <sub>DC</sub> ± 20 %, 3-wire
Power consumption:	approx. 170 mA
Electr. connection:	pluggable screw terminals via cable gland

See data sheet ADI-1 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		Flow rate max. 10 m/s approx.	Model		Connection		Frequency output			
[l/min water]	approx. Frequenz [Hz] at FS	[l/min water]	Material brass	Material st. steel	Standard female	Special female				
5-30	80	100	DPE-1105..	DPE-1205..	..G4.. = G ½	..N4.. = ½ 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 M12x 1			
10-50	80	180	DPE-1110..	DPE-1210..	..G5.. = G ¾	..N5.. = ¾ NPT	Analogue output ..L303 = 0-20 mA output, 3-wire, M12 x 1 plug connector ..L342 = 4-20 mA output, 2-wire, M12 x 1 plug connector ..L343 = 4-20 mA output, 3-wire, M12 x 1 plug connector ..L442 = 4-20 mA output, 2-wire, plug connector DIN 43 650			
20-80	65	230	DPE-1115..	DPE-1215..	..G6.. = G 1	..N6.. = 1 NPT	Compact electronic* ..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			
25-250	140	600	DPE-1120..	DPE-1220..	..G8.. = G 1 ½	..N8.. = 1 ½ NPT	Counter electronics ..E34R = LCD, 0(4)-20 mA, 2 x relays			
30-350	135	1000	DPE-1125..	DPE-1225..	..G9.. = G 2	..N9.. = 2 NPT	Dosing electronics ..G34R = LCD, 0(4)-20 mA, 2 x relays			
50-750	110	1600	DPE-1130..	DPE-1230..	..GB.. = G 3	..NB.. = 3 NPT				
With installation adapter not available with compact / ADI electronics							ADI electronics*			
Meas. range [m/s]	approx. frequency [Hz] at max. value	max. flow rate [m/s]	Material brass	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		K = bar graph/ digital display	0 = 100-240 V <sub>AC/DC</sub> 3 = 18-30V <sub>AC</sub> , 10-40 V <sub>DC</sub>	0 = without 4 = 0(4)-20 mA, 0-10V	2 = 2 change- over contacts

\* Please specify flow direction in writing.



**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	<b>AUF-1000</b>
as above however with additional open collector output	<b>AUF-1001</b>

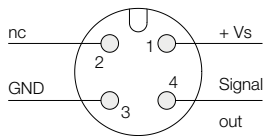
**Weights**

Sensor Electronics

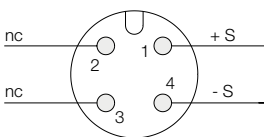
Model	Weight	Model	Weight
1/2"	approx. 750 g	Frequency output	130 g
3/4"	approx. 1050 g	Analogue output	130 g
1"	approx. 900 g	Compact electronic	approx. 650 g
2"	approx. 1500 g	ADI electronics	1400 g
3"	approx. 3000 g	E/G electronics	1400 g

**Electrical connection**

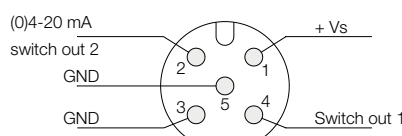
**DPE-..F., DPE-..L3..3-wire**



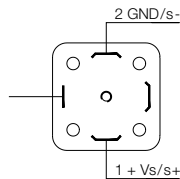
**DPE-..L342 2-wire**



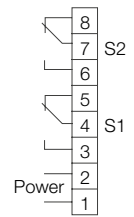
**DPE-..C..**



**DPE-..L442**

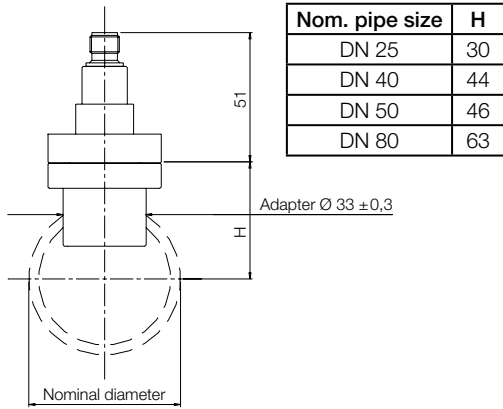


- 14 Control 1
- 13 Control 1 - GND
- 12 Control 2
- 11 Control 2 - GND
- 10 Analogue GND
- 9 Analogue 10 V
- 8 Analogue 20 mA
- 7
- 6
- 5
- 4 GND
- 3 f-Input Namur
- 2 f-Input NPN
- 1 f-Input PNP

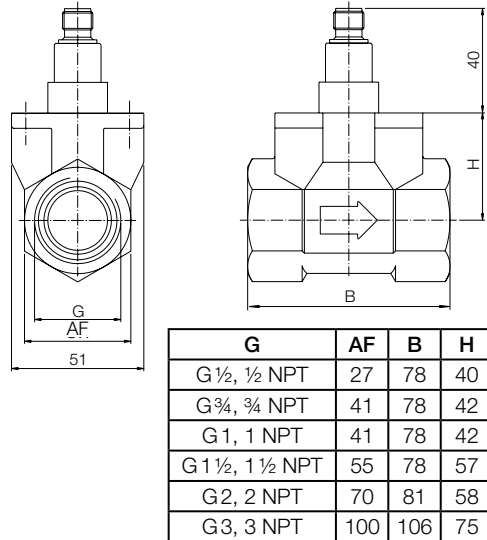


**Dimensions**

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

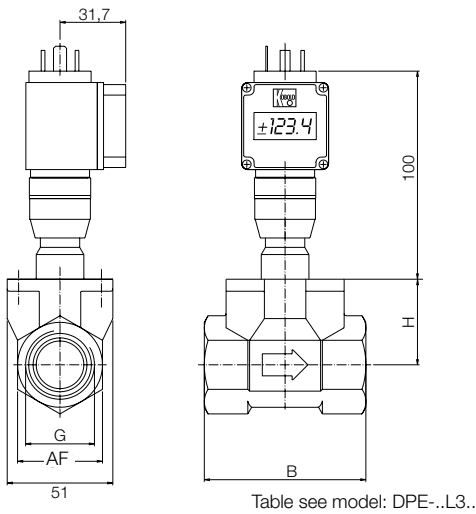


**Model: DPE-...L3.. / DPE-..F..** (with analogue output)

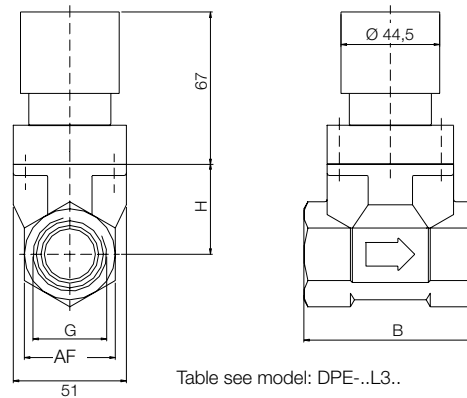


**Model: DPE-..L4..**

(with analogue output and plug-on display option)



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



**Model: DPE-..K.., ..G.., ..E..**

(with ADI evaluating, counter or dosing electronic)

