

Flowmeter

TDH...-25.../PP



Function

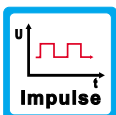
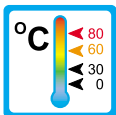
The flowmeters type TDH...-25.../PP are turbine flowmeters.



Application

The turbine flowmeters type TDH...-25.../PP are employed to measure and monitor volume flow of liquids. Areas of application:

- Medicine technology
- Pharmaceutical Industry
- Chemical Industry
- Research and Development



Features

The rotors of the series TDH...-25.../PP are equipped with magnets and a Hall-sensor detects the rotation of the rotor.

Further characteristics of the series are:

- Large measuring range
- Sapphire/PA-seating
- High accuracy
- Outputs (alternatively): frequency-, analog- or switch output
- PP-Version

Installation hints

The installation of the flowmeter can be done in any way in the system. The flow direction must be observed.

The flowmeter must not be used as a supporting part in a pipe construction.

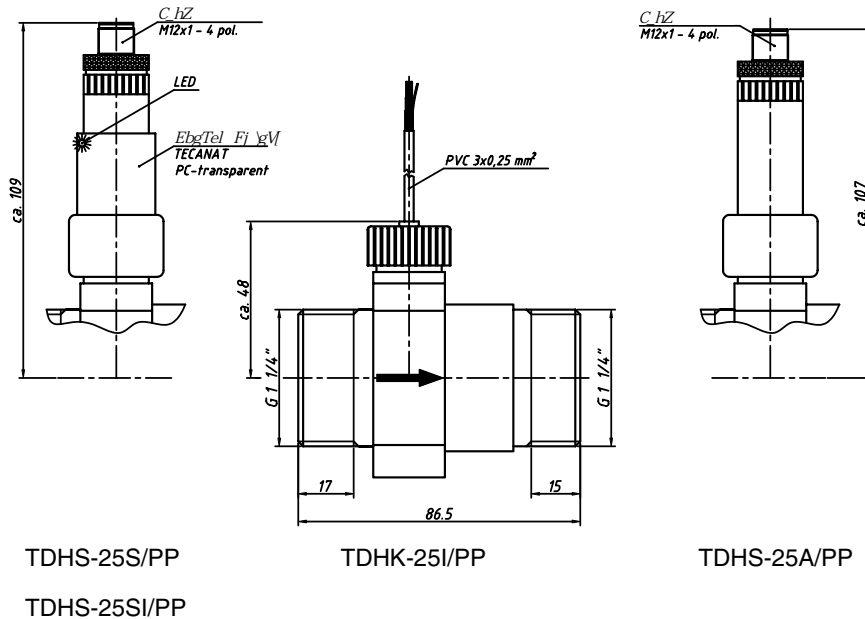
The medium must not contain any solids! We recommend the installation of a strainer.

External magnetic fields influence the measurement. Keep sufficient distance to magnetic fields (e.g. electromotors).

The operating instructions for TD...-25.../PP must be observed under any circumstances.



Technical Data



TDHS-25S/PP
TDHS-25SI/PP

TDHK-25I/PP

TDHS-25A/PP

Versions

Type	Measuring value sensing		Output		
	Hall-Sensor	Inductive proximity switch	Impulse output (see page 3)	Analog output (see page 4)	Switch output (see page 4)
TDHK-25I/PP	▲		▲		
TDHS-25A/PP	▲			▲	
TDHS-25S/PP	▲				▲
TDHS-25SI/PP	▲		▲		▲

Technical data

	Units with hall-sensor TDH...			
Process connection:	G 1 1/4" male thread			
Nominal size:	DN 25			
Max. medium temperature:	30 °C at 10 bar	60 °C at 5 bar	80 °C at 2 bar	
Nominal pressure:	PN 10 (see max. medium temperature)			
Range:	4 - 160 l/min, at continuous load max 80 l/min			
Start of signal output:	1 l/min			
Max. size of solids in medium:	0,5 mm			
Electric connection:	2 m shielded PVC-cable			
Cable connection (TDHK...)	T _{max} = 75 °C			
Plug (TDHS...)	4-Pin-Plug M12x1			
Power supply (Pulse output):	4,5...24 VDC			
Ingress protection:	IP 54			
Electric output:	see pages 3 and 4			
Options:				
Strainer	Screen strainer, screen aperture size 0,63 mm			

TD-25/PP 2 0001 04-05 E M



Materials, Technical data, Signal output

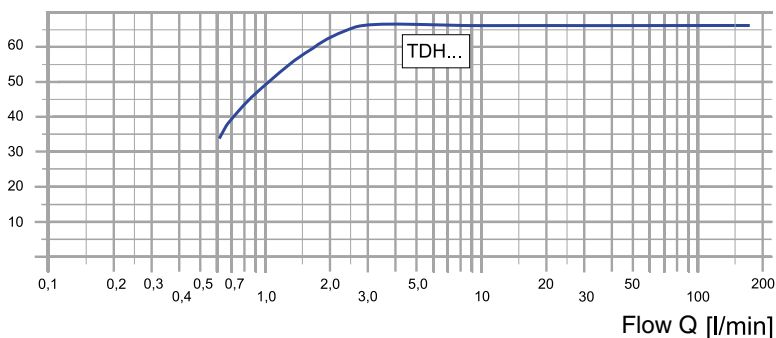
Materials

	Contact with medium?	Units with Hall-Sensor TDH...
Measuring tube	yes	PP
Turbine chamber	yes	PA Grivory HTV4X1
Impeller	yes	PP
Impeller magnets	yes	Permanent magnets, Recona 28 nickel-plated
Axis	yes	Stainless Steel 1.4436
Bearing	yes	Saphir / PA
Sensor bush	yes	POM Delrin 100 P
O-Ring	yes	72 NBR 872
Strainer (option)	yes	Stainless Steel 1.4301 (according O-Ring: 70 EPDM 281)

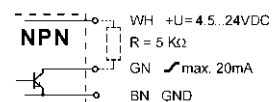
Technical data impulse output (TDHK-25I/PP)

	Units with Hall-Sensor TDH...
Accuracy:	± 3 % of range
Repeatability:	± 0,5 %
Output signal:	
Pulse rate / K-factor	67 Pulses / Liter
Resolution	15 ml / Pulse
Signal form	square wave
	NPN open collector
Signal current	max 100 mA
Diagram of connection	A1 (see below)
Start of signal output:	1 l/min

Pulse rate [1/l]

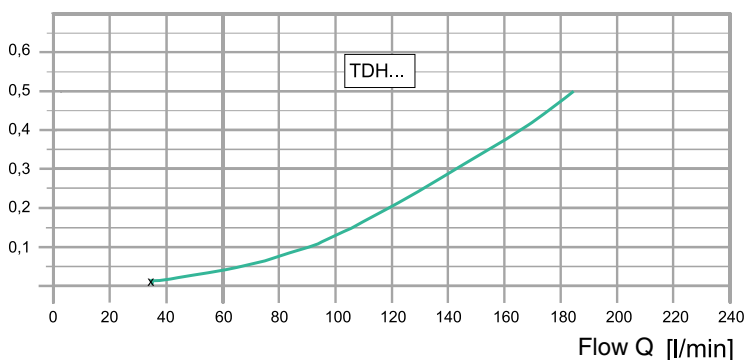


A1: TDHK-25I/PP (Cable)



BK = black BN = brown
 BU = blue GN = green
 WH = white

Pressure drop Δp [bar]



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Electric output

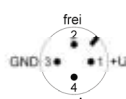
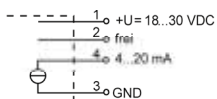
Technical data analog output (TDHS-25A/PP)

Accuracy:	± 3% of range		
Repeatability:	± 0,5%		
Output signal:	4...20 mA		
Current limit:	approx. 26 mA		
Scale:			
(Please state with order)	0...60 l/min	0...100 l/min	0...160 l/min
Power supply:	18...30 VDC		
Max. current consumption:	30 mA		
Max. ohmic resistance:	250 Ω against GND		
Residual ripple:	0,2 mA _{SS} through whole scale		
Design:	3-way, galvanically not insulated		
	Combined GND of supply voltage and output signal		
Electric connection:	4-Pin Plug, M12x1		
Ingress protection:	IP 54		
Diagram of connection:	B1		
Max. medium temperature:	30 °C at 10 bar	60 °C at 5 bar	80 °C at 2 bar
Material measuring transducer housing:	Plastic PA		

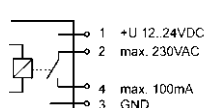
Technical data Switch output (TDHS-25S/PP) / Switch output + Pulse output (TDHS-25SI/PP)

Switch point setup:	by rotary switch															
Switch point table:																
Switch position	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Switch point increasing flow [l/min]	3	5	6	8	10	12	15	18	20	25	30	35	40	50	70	100
Switch point decreasing flow [l/min]	5	7	8	10	12	14	17	20	22	27	33	38	44	55	75	105
Accuracy:	± 0,8 l/min ±4 % of selected switch point															
Output:																
TDHS-25S/PP (Switch output only)	potential free contact, opens below setpoint contact rating max. 125 VAC/DC, 100 mA															
TDHS-25SI/PP (Switch output + Pulse output)	Switch output switches against supply voltage contact rating max. 100 mA Impulse output delivers flow proportional frequency signal NPN open collector, max. 10 mA															
Power supply:	12...24 VDC															
Current input:	max. 25 mA															
Ingress protection:	IP 54 with closed hull and attached cable box															
Indication, internal:	LED yellow = ok, LED red = alarm															
Electric connection:	4-Pin Plug, M12x1															
Diagram of connection:	C1 and C2 (see below)															
Max. medium temperature:	30 °C at 10 bar	60 °C at 5 bar	80 °C at 2 bar													
Housing material:	Plastic PA, transparent															

B1: TDHS-25A/PP



C1: TDHS-25S/PP



C2: TDHS-25SI/PP

