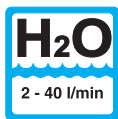


## TDH...-15.../PPO TDI...-15.../PPO



### Function

The flowmeters type TDH...-15.../PPO and TDI...-15.../PPO are turbine flowmeters.

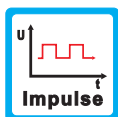
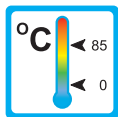


### Application

The turbine flowmeters type TDH...-15.../PPO and TDI...-15.../PPO are employed to measure and monitor volume flow of liquids.

Areas of application:

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



### Features

The rotors of the series TDH...-15.../PPO are equipped with magnets and a Hall-sensor detects the rotation of the rotor.

The rotors of the series TDI...-15.../PPO are equipped with stainless steel pins and an inductive proximity switch detects the rotation.

Further characteristics of both series are:

- specially designed guide vanes ensure a uniform flow onto the rotor
- Sapphire bearings
- High accuracy
- Frequency output
- High impact plastic optional: brass housing

### Installation information

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

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

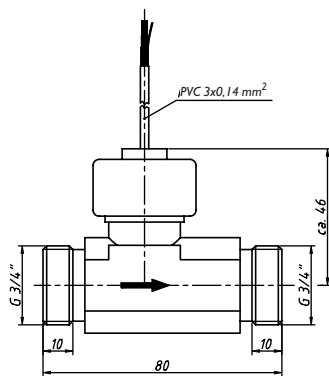
The medium must not contain any solids! We recommend the installation of a strainer.

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

The operating instructions for TDH...-15.../PPO and TDI...-15.../PPO must be observed under all circumstances.

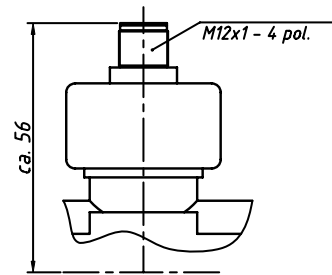


## Technical data



TDHK-15I/PPO

TDIK-15I/PPO



TDHS-15I/PPO

TDIS-15I/PPO

### Versions

Type	Measuring value sensing		Output		
	Hall-sensor	Inductive proximity switch	Impulse output (see page 4)	Analog output	Switch output
TDHK-15I/PPO	▲		▲		
TDIK-15I/PPO		▲	▲		
TDHS-15I/PPO	▲		▲		
TDIS-15I/PPO		▲	▲		

Besides the standard version (.../PPO), an optional version with a brass housing (.../MS) is available.

### Technical data

	Units with Hall-sensor TDH...	Units with inductive proximity switch TDI...
<b>Process connection:</b>	G 3/4" male thread with screw nuts and flat seals	
<b>Nominal diameter:</b>	DN 15	
<b>Max. medium temperature:</b>	85 °C	
<b>Nominal pressure:</b>	PN 10	
<b>Range:</b>	2 - 40 l/min	
<b>Start of signal output:</b>	approximately 0,3 l/min	
<b>Max. size of solids in medium:</b>	0,5 mm	
<b>Electric connection:</b>		
Cable connection (TDHK... or TDIK...)	1,5 m shielded PVC cable	2,0 m shielded PVC cable
	$T_{max} = 70\text{ °C}$	$T_{max} = 70\text{ °C}$
Plugs (TDHS... or TDIS...)	4-Pin plug M12x1	4-Pin plug M12x1
<b>Power supply (Pulse output):</b>	4,5...24 VDC	12...24 VDC
<b>Ingress protection:</b>	IP 54	
<b>Electric output:</b>	see page 4	
<b>Options:</b>		
Strainer	screen strainer, screen aperture size 0,5 mm, $T_{max} = 60\text{ °C}$ (continuous flow), $T_{max} = 85\text{ °C}$ (max 1 h)	

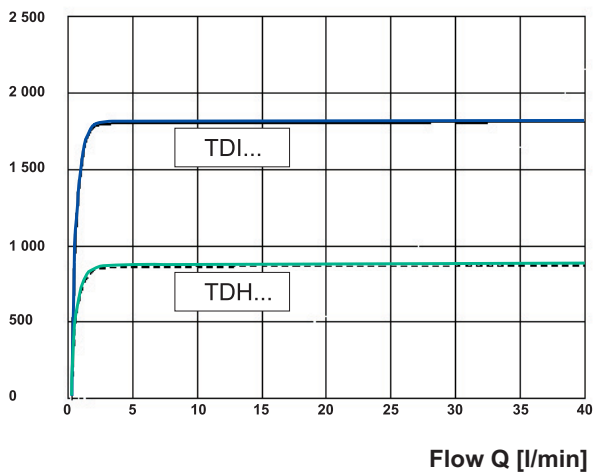
TD-15/PPO 2 0004 11-11 E M



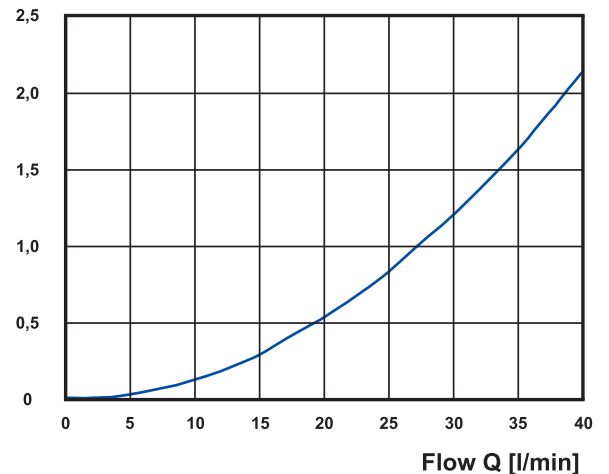
## Materials, technical data

Materials			
	Wetted parts	Units with Hall-sensor TDH...	Units with inductive proximity switch TDI...
Measuring tube	yes		
Standard version (.../PPO)		PPO (Noryl GFN3)	
Brass housing (.../MS)		Brass (CuZn36Pb2As)	
Sensor	yes	PPO (Noryl GFN3)	
Union nut	no	PA GF 30	
Turbine chamber and impeller	yes	PEI ULTEM	
O-Ring / gasket	yes	NBR	NBR (standard), Viton (option)
Bearing / Axle	yes	Axle of Arcap AP1D with hard metal pins in sapphire bearings	
Bearing support	yes	Arcap AP1D	
Impeller magnets	yes	Hard Ferrite magnet	Stainless Steel pins
Strainer (option)	yes	POM / Stainless Steel	

Impulse rate [1/l]



Pressure drop  $\Delta p$  [bar]

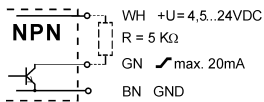


# Signal output

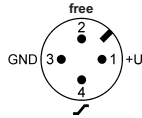
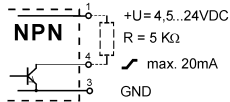
## Technical data, impulse output (TDHK-15I/PPO, TDHS-15I/PPO, TDIK-15I/PPO and TDIS-15I/PPO)

	Units with Hall-sensor TDH...	Units with inductive proximity switch TDI...
<b>Accuracy:</b>	± 1% of range	± 0,5 % of range
<b>Repeatability:</b>	± 0,2 %	± 0,1%
<b>Output signal:</b>		
Pulse rate / K-factor	855 Pulses / Liter	1795 Pulses / Liter
Resolution	1,2 ml / Pulse	0,6 ml / Pulse
Signal form	square wave	square wave
Signal current	NPN open collector max. 10 mA	PNP or NPN open collector max. 10 mA
Connection diagram	A1 and A2 (see below)	B1, B2, C1 and C2 (see below)
<b>Start of signal output:</b>	approximately 0,3 l/min	approximately 0,3 l/min

A1: TDHK-15I/PPO (Cable)



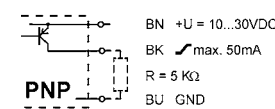
A2: TDHS-15I/PPO (Plug)



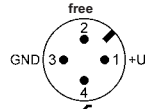
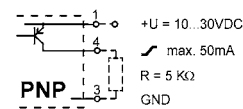
BK = black  
BU = blue  
WH = white

BN = brown  
GN = green

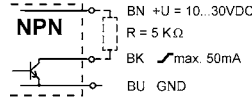
B1: TDIK-15I/PPO (PNP, Cable)



B2: TDIS-15I/PPO (PNP, Plug)



C1: TDIK-15I/PPO (NPN, Cable)



C2: TDIS-15I/PPO (NPN, Plug)

