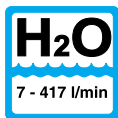


Flowmeter

TDH...-40.../MS TDI...-40.../MS

Function

The flowmeters type TDH...-40.../MS and TDI...-40.../MS are turbine flowmeters.

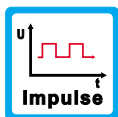
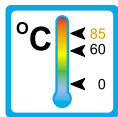


Application

The turbine flowmeters type TDH...-40.../MS and TDI...-40.../MS are employed to measure and monitor volume flow of liquids.

Areas of application:

- Research and development
- Mechanical engineering
- Plant construction



Features

The rotors of the series TDH...-40.../MS are equipped with magnets and a Hall-sensor detects the rotation of the rotor.

The rotors of the series TDI...-40.../MS are equipped with stainless steel-pins and an inductive proximity switch detects the rotation. Further characteristics of both series are:

- Large measuring range
- Sapphire/PA-seating
- High accuracy
- Outputs (alternatively): frequency-, analog- or switch output
- Sturdy brass-version
- Integrated strainer

Installation hints

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.

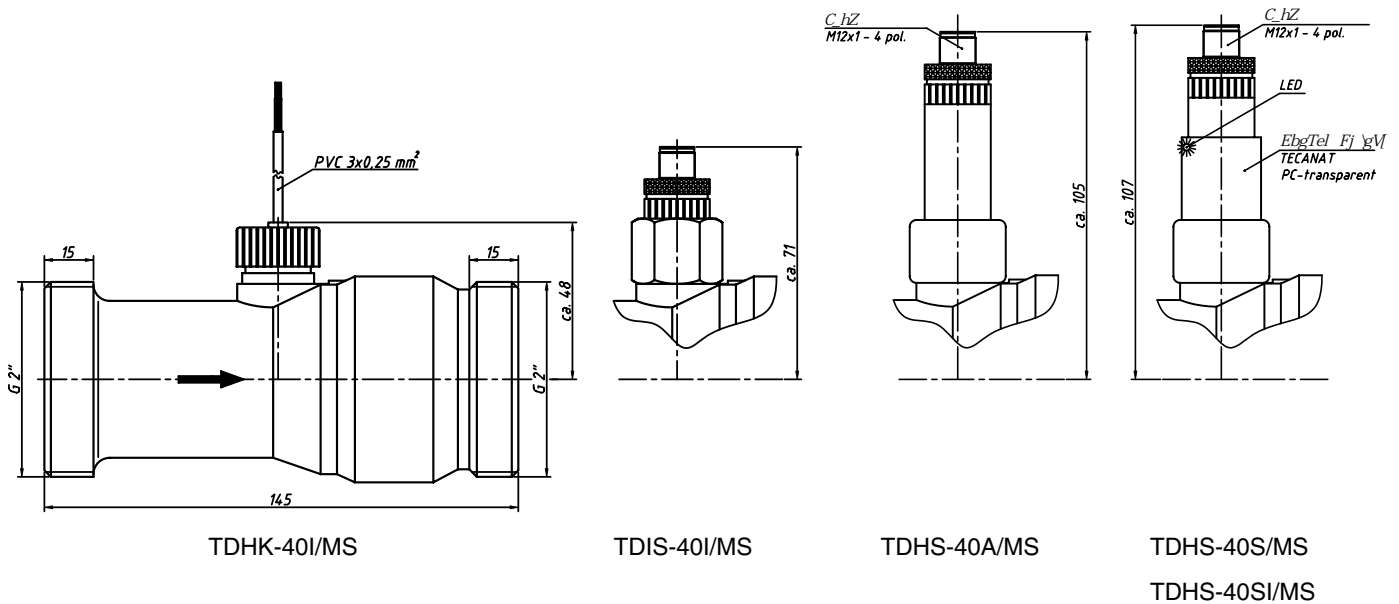
The medium must not contain any solids!

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

The operating instructions for TDH...-40.../MS and TDI...-40.../MS must be observed under any circumstances.



Technical data



Versions

Type	Sensing method		Output		
	Hall-Sensor	Inductive proximity switch	Impulse output (see page 3)	Analog output (see page 4)	Switch output (see page 4)
TDHK-40I/MS	▲		▲		
TDIS-40I/MS		▲	▲		
TDHS-40A/MS	▲			▲	
TDHS-40S/MS	▲				▲
TDHS-40SI/MS	▲		▲		▲

Technical data

	Units with Hall-Sensor TDH...	Units with inductive proximity switch TDI...
Process connection:	G 2" male thread Additional connection fitting recommended!	
Nominal size:	DN 40	
max. medium temperature:	85 °C	60 °C
Nominal pressure:	PN 10	
Range:	6,7 - 417 l/min (0,4...25 m³/h)	
Start of signal output:	0,1 m³/h	
max. size of solids in medium:	0,5 mm	
Electric connection:		
Cable connection (TDHK...)	2 m shielded PVC-cable	—
	$T_{max} = 75 \text{ °C}$	—
Plug (TDHS... or TDIS...)	4-Pin-Plug M12x1	4-Pin-Plug M12x1
Power supply (Pulse output):	4,5...24 VDC	12...24 VDC
Ingress protection:	IP 54	
Electric output:	see pages 3 and 4	
Integrated strainer:	plain strainer, screen aperture size 0,63 mm	

TD-40/MS 2 0001 06-05 E M



Materials, technical data, signal output

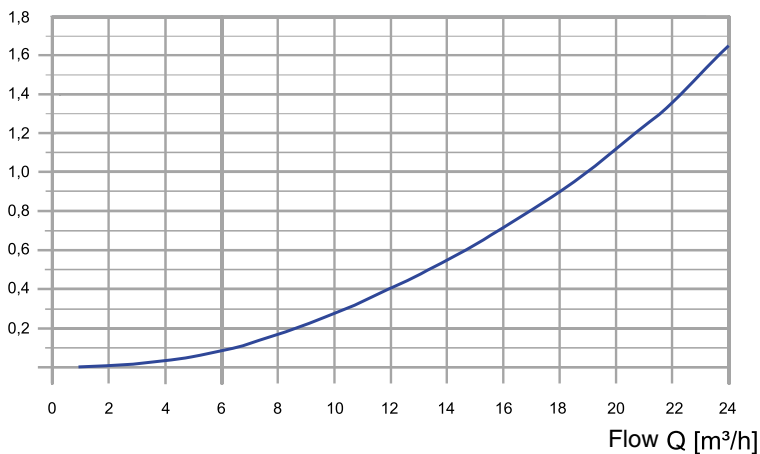
Materials

	Wetted part?	Units with Hall-sensor TDH...	Units with inductive proximity switch TDI...
Measuring tube	yes	brass (CuZn36Pb2As)	
Turbine chamber	yes	PA Grivory HTV4X1	
Impeller	yes	PP	
Impeller magnets	yes	permanent magnets, nickel-plated Recona 28	stainless steel 1.4571
Axis	yes	stainless steel 1.4436	
Bearing	yes	sapphire / PA	
Sensor bush	yes	POM Delrin® 100 P	
O-ring	yes	72 NBR 872	
Flow straightening cone	yes	POM Celcom	
Strainer	yes	stainless steel 1.4301	
Guard ring	yes	bronze 2.1030.34	

Technical data impulse output (TDHK-40I/MS, TDIS-40I/MS)

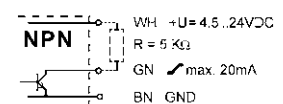
	Units with Hall-sensor TDH...	Units with inductive proximity switch TDI...
Accuracy:		
0,4... 3 m³/h	± 5 % of range	
3 ...25 m³/h	± 3 % of range	
Repeatability:	± 0,5 %	
Output signal:		
Pulse rate	26,6 Pulses / Liter	
Resolution	37,6 ml / Pulse	
Signal form	square wave NPN open collector	square wave PNP open collector
Signal current	max. 100 mA	max. 10 mA
Connection diagram	A1 (see below)	B1 (see below)
Start of signal output:	0,1 m³/h	

Pressure drop Δp [bar]

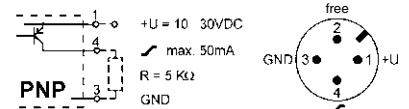


TD -40 /MS 3 0001 06-05 E M

A1: TDHK-40I/MS (Cable)



B1: TDIS-40I/MS (PNP, Plug)



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



Electric output

Technical data analog output (TDHS-40A/MS)

Accuracy:			
0,4... 3 m ³ /h	± 5 % of range		
3 ...25 m ³ /h	± 3 % of range		
Repeatability:	± 0,5%		
Output signal:	4...20 mA		
Current limit:	approx. 26 mA		
Range:			
(Please state with order)	0...150 l/min	0...250 l/min	0...400 l/min
Power supply:	18...30 VDC		
max. current consumption:	30 mA		
max. load:	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		
Connection diagram:	C1		
max. medium temperature:	80 °C		
Measuring transducer housing material:	plastic PA		

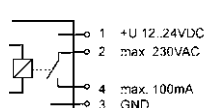
Technical data Switch output (TDHS-40S/MS) / Switch output + Pulse output (TDHS-40SI/MS)

Switch point setup:	by rotary switch															
Switch point table:																
Switch point	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Switch point decreasing flow [l/min]	7	10	15	20	25	30	35	40	50	65	80	100	130	160	200	275
Switch point increasing flow [l/min]	10	13	19	24	30	35	40	47	58	75	90	115	150	190	230	310
Accuracy:	± 2,0 l/min ±6 % of selected switch point															
Output:																
TDHS-40S/MS (Switch output only)	potential free contact, opens below setpoint contact rating max. 125 VAC/DC, 100 mA															
TDHS-25SI/PPO (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															
Connection diagram:	D1 and D2 (see below)															
max. medium temperature:	80 °C															
Housing material:	plastic PA, transparent															

C1: TDHS-40A/MS



D1: TDHS-40S/MS



D2: TDHS-40SI/MS

