

Certified according to DIN EN ISO 9001

Technical Datasheet




HM 00*/TC-R/S-01-PP_500-M12-Ex

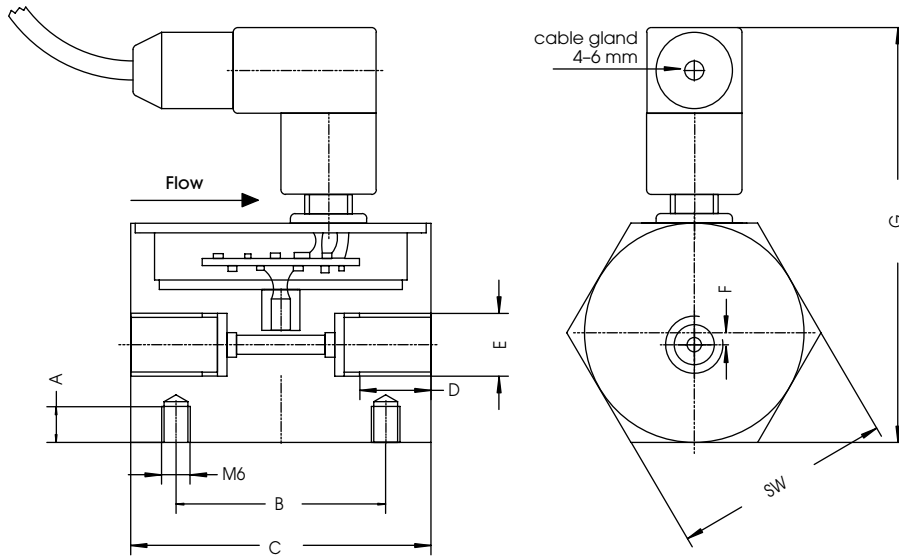
Turbine Flow Meters for Solvents and DI-Water

Technical Data - HM 00*/TC-R

Type	Measuring range ltr./min	K-Factor, pulses/ltr. ¹⁾	Frequency range Hz
HM 003/TC-R*	0.3 bis 1.5	32,500	1,100
HM 004/TC-R*	0.5 bis 4	24,000	1,700
HM 005/TC-R*	0.8 bis 6	17,800	1,700
HM 006/TC-R*	1.2 bis 10	10,300	2,100
HM 007/TC-R*	2 bis 20	5,200	3,100

Linearity:	±1 % of actual flow
Repeatability:	±0.5 %
Operating temperature:	up to +80 °C
Operating pressure:	640 bar
Connections:	Female threads G 1/4" or 3/8" according to HM size
Materials:	stainless steel as per DIN 1.4571, 1.4460 cf. AISI 316 TI and 329
Electrical data	
Supply voltage:	10 up to 30 V DC
Output	Push pull I _{out} max. 20 mA Duty cycle 1:1
Connection:	Flange plug series 713 (M12x1)
Ingress protection:	IP 67
Ex-protection (ATEX 100):	 II 2G EEx ia IIC T4 für 2G oder 3G nach ATEX 100

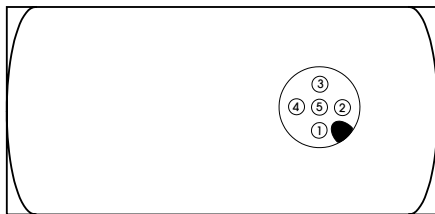
Dimensional Drawing (mm)



Type	A	B	C	D	E	F	SW	G
HM 003/TC-R*	7.5	44	63	15	G 1/4"	2.5	46	87
HM 004/TC-R*	7.5	44	63	14.5	G 1/4"	2.5	46	87
HM 005/TC-R*	7.5	44	70	14.5	G 3/8"	2.5	46	87
HM 006/TC-R*	7.5	44	70	14.5	G 3/8"	2.5	46	87
HM 007/TC-R*	7.5	44	74	14.5	G 3/8"	2.5	46	87

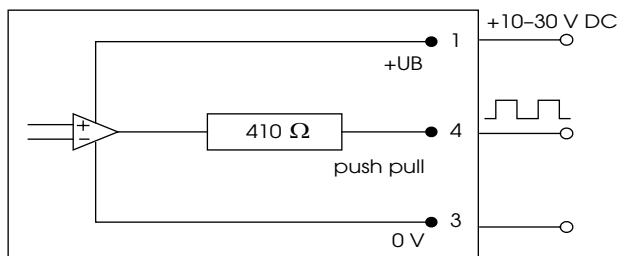
Electrical Connection

Top view turbine flow meter with 5-pin plug



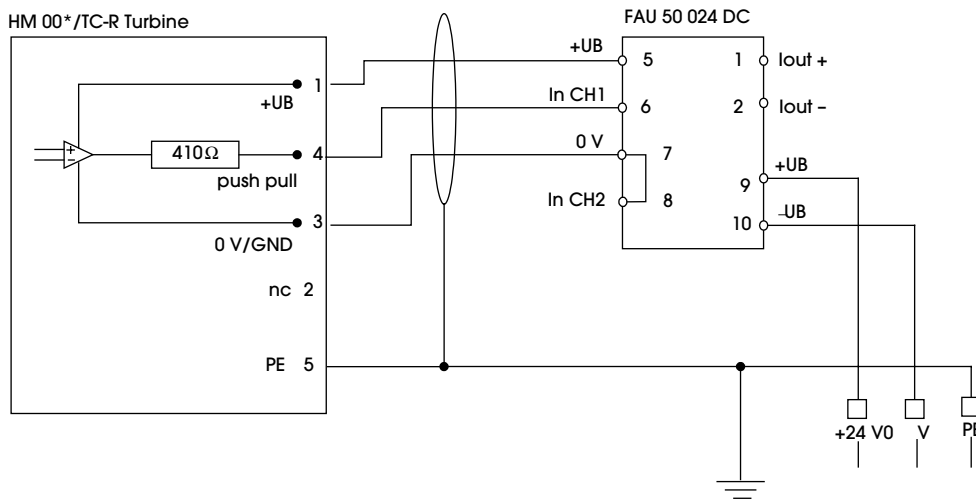
Connection via socket with five screw terminals and cable gland:

- 1 = UB
- 2 = nc
- 3 = 0 V
- 4 = push pull out
- 5 = PE



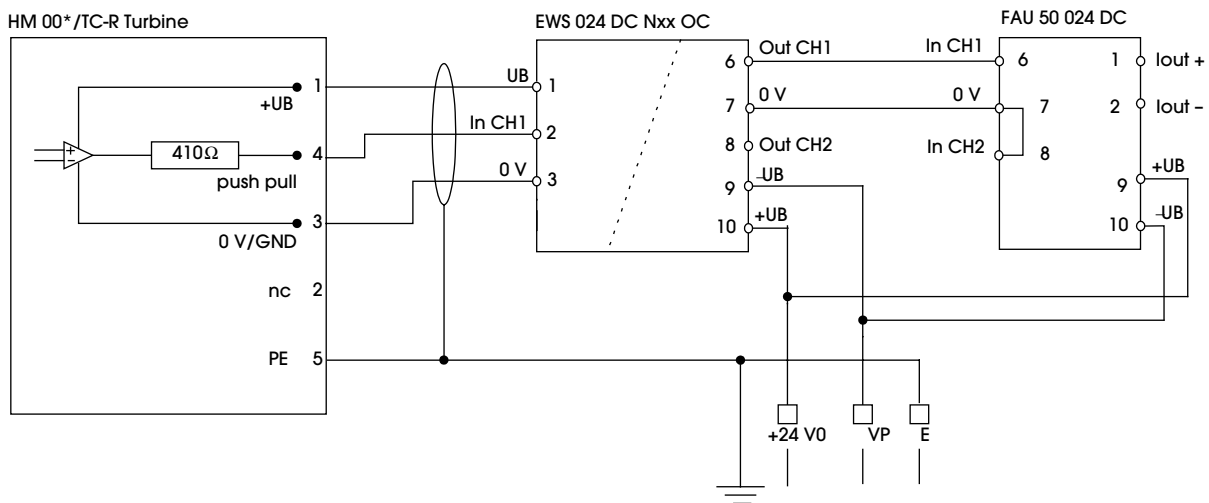
Examples for connection

outside hazardous areas



inside hazardous area

outside hazardous areas



Marking of the Pulse Amplifier

KEM Küppers Elektromechanik GmbH

CE 0123 Ex II 2G EEx ia IIC T4

DMT 02 ATEX E 184

HM 00*/TC-R/S-01-PP_500-M12-Ex Ser.Nr. 12345678

-40°C ≤ Ta ≤ 50°C

Ui=30V/DC, Ii = 120mA, Pi = 750mW

Electrical Data

Supply circuit connector-pins 1 and 3

voltage	$U_i = \text{DC } 30 \text{ V}$
current	$I_i = 120 \text{ mA}$
power	$P_i = 750 \text{ mW}$
effective internal capacitance	$C_i = \text{negligible}$
effective internal inductance	$L_i = \text{negligible}$

Signal circuit push/pull connector-pins 4 and 3

voltage	$U_i = \text{DC } 30 \text{ V}$
current	$I_i = 120 \text{ mA}$
power	$P_i = 750 \text{ mW}$
internal resistance	$R_i = 410 \Omega, \pm 5\%$
effective internal capacitance	$C_i = \text{negligible}$
effective internal inductance	$L_i = \text{negligible}$

The device must be operated with limited power.

Notes on Installation

The following has to be adhered to:

- a) Installation instructions for electrical devices,
Installation instructions for associated intrinsically-safe devices
The »Special conditions for safe use« as per EC-Type Examination Certificate
- b) The amplifier has to be installed in a way that the max. ambient temperature does under no circumstances exceed $+50^\circ\text{C}$ (consider self heating).
- c) With cables care should be taken, that the max. inductivity and capacity of the respective voltage or gas group are not exceeded.
- d) Exceeding or falling below the regular measuring range will cause invalid frequency output signals.
- e) Shielded cables are to be used as connecting lines.
- f) Generally, supplied units have to be connected by an expert according to EMC stipulations.
- g) It is recommended to use filters of $100 \mu\text{m}$ to ensure a safe operation. In addition, check valves should be installed with pulsating flows.

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