

GENERAL CHARACTERISTICS

The magnetic-inductive FIS probe is assembled into the pipe by support of a sleeve welded into the relevant pipe to receive the sensor (min. pipe diameter DN 50). For installation position and depth see diagrams Alternatively a clamp saddle arrangement may be used.

- * measurement of conductive liquids
- * one sensor for a wide range of pipe diameters
- * high grate materials
- * no moving parts
- * changeable sensor with no lost of liquid

assembly welded pruning, assembly clamp DN 50-150



TECHNICAL DATA

measuring ranges	end range 1 to 8 m/s in steps of 1 m/s
accuracy	±5 % of measured value (calibration on site + 2 % of measured value)
reproducibility	±2 % of measurement value
time constant	5 second fixed
measurement substance	lagely homogeneous fluids, pastes can also include solid Particles
media conductivity	min. 20 µS/cm
flow temperature	-25..150°C
ambient temperature	-25..60°C
system pressure	max. 25 bar welded tube max. 10 bar clamp saddle
weight	2.4kg without clamp saddle

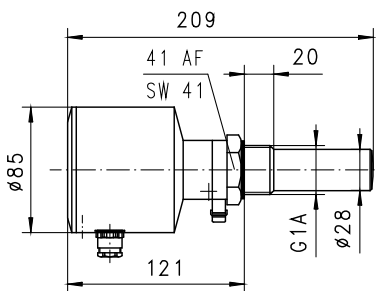
PRINCIPLE

If a conductor moves vertically in relation to a magnetic field, the movement will induce an electrical potential U in the conductor. In this measuring principle the electrically conductive measuring medium is the conductor. The magnetic field B is produced at right angles to the flow. The induced electrical potential U is directly proportional to the local speed of flow v.

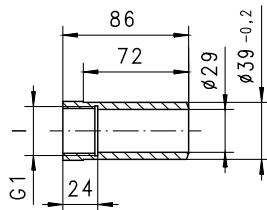
$$U = k \cdot B \cdot v \cdot D$$

- k = constant for the instrument
- B = strength of magnetic field
- v = local speed
- D = distance between electrodes

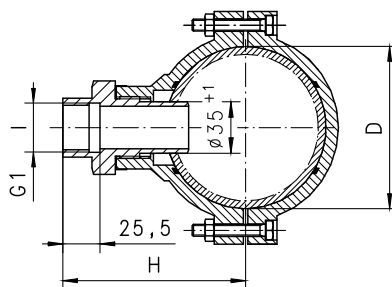
The potential U is tapped at the electrodes, midpoint and earth (tube) electrodes, and converted to a proportional 4(0)-20 mA signal.



FIS-025VK



FIS...BB

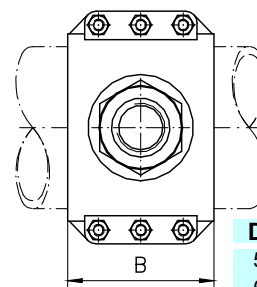


50 (2")	76
80 (3")	73
100 (4")	69
150 (6")	62
200 (8")	56
250 (10")	49
300 (12")	42
350 (14")	37
400 (16")	31
DN	

Maße ab Außendurchmesser Rohr

MATERIALS

probe	stainless steel 1.4435
isolation	ceramic (zirkonium oxide)
clamp saddle	PP, 1.4305
housing	stainless steel 1.4305 viton, klingerit



DN	D	H	B
50	63	110	70
65	75	113	80
80	90	120	90
100	110	125	100
125	140	135	125
150	160	143	130

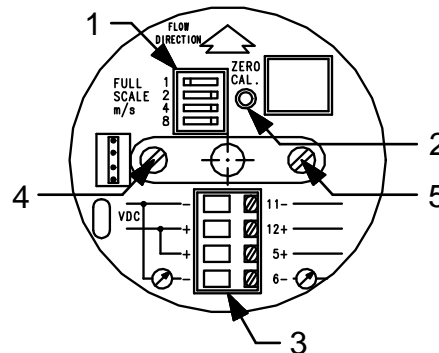
MOUNTING

The magnetic-inductive FIS probe is assembled into the pipe by support of a sleeve welded into the relevant pipe to receive the sensor (min. pipe diameter DN 50). For installation position and depth see diagrams Alternatively a clamp saddle arrangement may be used. Inlet and outlet sections must be $\geq 10x$ diameter of pipe. Weld the connector sleeve vertically to the centre of the pipe according to the pipes nominal diameter (see marking = external pipe diameter). Do not use force! The Probe must be screwed in handtight. After putting in place, the probe can be aligned by rotation (see electrical connection). The complete measuring probe is removable without damaging the carrier, so that the electronic part can be exchanged in case of defect.

ELECTRICAL DATA

supply voltage	24V DC \pm 10%
current consumption	50mA (bei 24VDC und 20°C)
output	4..20mA (passiver Stromausgang) Lastwiderstand max. 500 W
protection class	IP 65 cable gland IP 67 locking plug

To make the electrical connection, open the cover (held by security band) and remove the 3 hexagonal head screws inside (take care not to loose the screws!) The arrow on the electronics unit must point into the direction of the flow release screw (19) 2 turns.



- 1** DIP switch for end of scale
- 2** Push bottom for zero-adjustment
- 3** Terminal block

Do not unscrew completely! Rotate the electronics unit as appropriate, then tighten the screws again. The direction of the arrow is not asserted to the alignment of the housing.

Output signals are set using the DIP switch (1,2,3,4,5,6,7,8 m/s, see sketch).

Sample : to the DIP switch



Power supply (24V DC) at the terminals 12 and 11 with max 1.5mm² Current consumption at 24V DC max 50mA (at 20°C) Current output : 24V DC (terminals 6 (-) and 5 (+). Check polarity! Max load 500 Ohm.

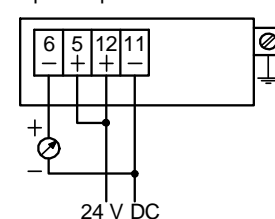
Zero setting: Fill pipe completely with measuring substance. Flow speed in the pipeline must be "zero"! Press button marked "ZERO CAL". After a minute, the device will have self-calibrated.

An automatic self-test will be carried out when the device

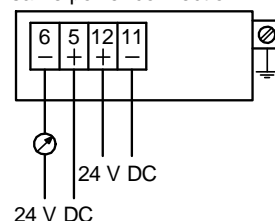
no error : measurement activity, current output 0(4)-20 mA

error : current output reads 3 mA, error!

separate power connection

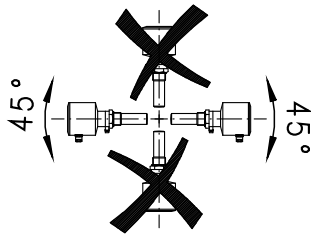


same power connection



FE < 10 Ohm
Earth
Must be installed!

MOUNTING POSITION



The positions vertical are not recommended due to air bubbles or sediments in pipe

METERING SUBSTANCES



water



for aggressive liquids

measurement of conductive liquids

NOMENCLATURE

FIS-	025	V	K	001	G	basic type specification
	025				●	DN 025 (welded tube)
	050				●	DN 050
	065				●	DN 065
	080				●	DN 080
	100				●	DN 100
	125				●	DN 125
	150				●	DN 150
		V			●	welded tube
		B			●	clamp saddle
			K		●	stainless steel (welded tube)
			B		●	PP (clamp saddle)
				001	●	end of scale
				002	●	
				003	●	
				004	●	
				005	●	
				006	●	
				007	●	
				008	●	
					G ●	cable gland Pg9 (cable not included)
					S ○	connection at locking plugs M12x1, 4-pole

special application smart-FIS The FIS transducer is also available with a smart-electronic cover. This electronic includes a display, two programmable switch points, frequency output, progr. filter, linearisation, memory of extrem values, totaliser, choiseable unit on the display.

ACCESSORY

Locking plug M12x1

K	PU-	02	S	G	basic type specification
K				●	ready-made cable
KB04				●	self makable cable 4-pole
	PU-			●	material PUR
		02		●	length 2 m
		05		●	length 5 m
		10		●	length 10 m
			S	●	moulded-on plug
				G ●	straight plug
				W ●	angled plug 90°



counter EEZ904, product information 83.1.EEZ904.

All technical changes reserved

●BASIC Standard ○BASIC Programme option □VARIO Special option ⊕ PLUS Accessories ✗not recommendable